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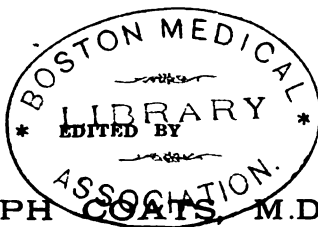
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THE
GLASGOW MEDICAL JOURNAL.

THE
GLASGOW MEDICAL JOURNAL.



JOSEPH COATS, M.D.,

FOR THE

Glasgow and West of Scotland Medical Association.

JANUARY TO JUNE 1882.

VOL. XVII.

GLASGOW:

ALEX. MACDOUGALL, 81 BUCHANAN STREET.

LONDON: H. K. LEWIS, 136 GOWER STREET.

1882.

THE
GLASGOW MEDICAL JOURNAL.

No. I JANUARY 1882.

ORIGINAL ARTICLES.

ON A CASE OF PYELO-NEPHRITIS WITH
MICROCOCCI.

By JOHN LINDSAY STEVEN, M.B.,

One of the Assistants to the Professor of Clinical Medicine in Glasgow University; and Demonstrator in Dr. Coats' Class of Practical Pathology.

(With Two Woodcuts.)

THE following paper contains the results of a careful microscopical investigation into the morbid changes occurring in a kidney, which was the seat of very numerous miliary abscesses. The organ was removed from the body of a man who, at intervals for a period of two years, had been the subject of very interesting clinical observations in Professor Gairdner's wards at the Western Infirmary; and, as the appearances presented are of considerable importance, and serve, I think, to throw some light on the relations between suppurative inflammation of the kidney and the presence of minute organisms, they have been considered worthy of record. I am indebted to the great kindness of Dr. Gairdner for the following brief outline of the clinical history, which I have taken from his notes on the case contained in the Western Infirmary Pathological Reports:—

— M'S. was first admitted to hospital on the 29th January, 1879, suffering from reputed nephric or perinephric abscess on the left side, with a nearly constant sediment of pus in the urine. The disease was possibly due to injury of the

abdomen, and "commenced with rigors frequently repeated, frequent micturition, pain at the point of the penis, retraction of the testicle, nausea, &c., previous to . . . admission." The tumour extended from the "hypochondrium to the iliac spine, and into the lumbar region, evidently surrounding the left kidney." A sudden subsidence of the tumour occurred, with every evidence of opening into the "intestinal canal *per orem (?) et per anum.*" After seven months' treatment in hospital he was dismissed much improved; he commenced work in October 1879, and continued till November 1880. He was again admitted in January 1881, "when a large re-accumulation was discovered in the left lumbar region, which was opened antiseptically on January the 29th, with some relief and lowering of the temperature for the time." It is unnecessary for our present purpose to go more minutely into the clinical history of this deeply interesting case, and it will suffice to say that, after gradually sinking for a long time, he died on the 2nd May, 1881.

The *post-mortem* examination was made by Dr. Coats, and I am indebted to him for the following notes, which contain the chief points of importance in the present inquiry. The heart, except that it was rather small, presented normal appearances. An open wound of elongated shape and about one inch in length, which communicated with an abscess having wide ramifications within the abdomen, and especially behind the kidney, was situated on the left posterior aspect of the body beneath the margin of the ribs. The left kidney was "found considerably reduced in size, and converted into a series of cavities containing pus. The ureter is in open communication with the abscess at a point slightly below the lower border of the kidney. Below this the ureter is nearly obstructed, apparently by a branch of the abscess, which nearly surrounds it. This branch of the abscess is found to communicate in a remarkable manner with the other ureter just above the bladder, so that pus was seen to issue from the right ureter into the bladder." The right kidney is very greatly enlarged. The mucous membrane of the pelvis has a grey injected appearance. The kidney tissue is the seat of innumerable miliary abscesses of very small size. These occur mostly in groups, and are present in the pyramids as well as in the cortex. This kidney weighs 10 ounces.

The work of minutely examining the tissue of this kidney by the microscope was assigned to me by Dr. Coats, and the following is an account of the condition of matters which was found:—

The method of investigation adopted was that of Weigert, as recommended by Koch. "The objects for examination," says Koch, "are first hardened in alcohol. The sections from these are allowed to lie for a considerable time in a pretty strong watery solution of methyl-violet. They are then treated with dilute acetic acid, the water removed by alcohol, cleared up in oil of cloves, and mounted in Canada balsam. Instead of methyl-violet, other aniline dyes, (e. g., fuchsin, aniline-brown, &c.) may be used in the same manner." * This quotation from Koch expresses shortly and very well the method employed; but, with reference to the present case, it is necessary to make the following additional remarks:—The sections examined were for the most part made by hand with the razor, the freezing process not being used, as it was found to interfere with the proper staining of the specimens. Where chromic acid had been used as the hardening agent, the staining was never so good. The dye used in this investigation was a watery solution of Bismarck brown, one of the aniline dyes. It stains the sections of a rich reddish-brown colour, and it possesses this advantage over some of the aniline dyes, notably methyl-aniline, that it does not quickly dissolve out, when the section is put into spirit.

The examination, then, of the present case and the comparison of it with other cases, where micrococci have been found in the tissues of the kidney, such as ulcerative endocarditis, &c., suggest several important questions for solution. Chief amongst these may be mentioned the exact site of the organisms in the kidney tissue, the source from which they have been derived, and their effects in producing inflammation. I shall endeavour, therefore, in what follows, to point out how the condition of matters, at present under review, illustrates these points:—

The first thing noted was a most intense interstitial inflammation, which, however, was not generalised, but occurred in patches, leaving parts of the kidney tissue comparatively free. These inflammatory areas were not confined to one part of the kidney, but occurred almost equally in the pyramidal and cortical portions, if anything, perhaps more abundantly in the latter. One very noticeable feature was, that the inflamed areas absorbed the colouring matter very greedily, and the inflammatory corpuscles were always more deeply stained than the epithelium of the

* *Investigations into the Etiology of Traumatic Infective Diseases.* By Dr. Robert Koch, (Wollstein.) Translated by W. Watson Cheyne, F.R.C.S. London: New Syd. Soc. 1880.

tubules. The staining, then, became of some importance, when it was necessary to distinguish between epithelium and inflammatory corpuscles. In some places the inflammation was so intense, that it was difficult to make out any trace of kidney tissue left, and in others the centres of the areas had commenced to break down, evidently the beginning of an abscess. It was then noted by the low power that there were certain very small areas much more deeply and vividly stained than even the inflammatory areas themselves. When these were examined with a higher power (the D. of Zeiss), they were found to consist of a mass or colony of very minute round bodies—micrococci. The bodies were of exceeding minuteness, but of uniform size, and absorbed the colouring matter greedily. Their avidity for the colouring matter was proved by the use of Abbé's condenser, which has proved of so much service in the hands of Koch in his wonderful experiments. By the use of this instrument, we can get a "colour" as opposed to a "structure picture," the latter being that seen in ordinary microscopic work. The effect of the "colour picture" is to get rid of the shadows, and bring prominently into view all the parts of the section which are deeply stained. By such an arrangement minute organisms, which are deeply stained, but hidden by the shadows of fibres and cells, are brought into view. This instrument, of which we have a description in Koch's work already referred to, must be simply invaluable in searching for micrococci which are isolated throughout the tissues, though in the present case, where they occur in comparatively large groups, it is not so essential.

Having thus been satisfied that micrococci were present, the next step in the investigation was to demonstrate in what part of the tissue they were situated, and the important question to be decided was—are they in the vessels or in the tubules? Micrococci were found both in the cortical and pyramidal portions, but, if anything, the colonies, I think, were greater in number and size in the latter than in the former. In some situations colonies would be seen with comparatively little inflammation around them, as if they had been recently deposited, whilst in others they were situated in the midst or at the margin of a most intensely inflamed area. The shape of the colonies, too, as would be expected, differed according as they were situated in cortex or pyramid. In the former there was simply a small round or irregularly shaped mass, whilst in the latter the colony occurred as a column of varying length, with its long axis in the same direction as that of the urini-

ferous tubules. Having thus observed the general distribution of the colonies, the next and much more difficult point was to determine whether they were situated in the blood-vessels or in the uriniferous tubules. On examining carefully, it was found that the most of the colonies were directly continuous at either end with the epithelium of the tubules. In some, especially near the end of the colony, the organisms were noticed to have larger cells, probably epithelial cells, mixed up with them. Then, again, a colony (perhaps, to speak strictly, two colonies) was seen of great length, but divided in its central part by a space, although the whole was manifestly contained in the same tube. In the space between the two masses of micrococci distinct renal epithelium was made out, and also epithelial cells mixed up with the organisms themselves, proving very conclusively, I think, that they were contained in a uriniferous tubule (fig. 1.) Among the con-

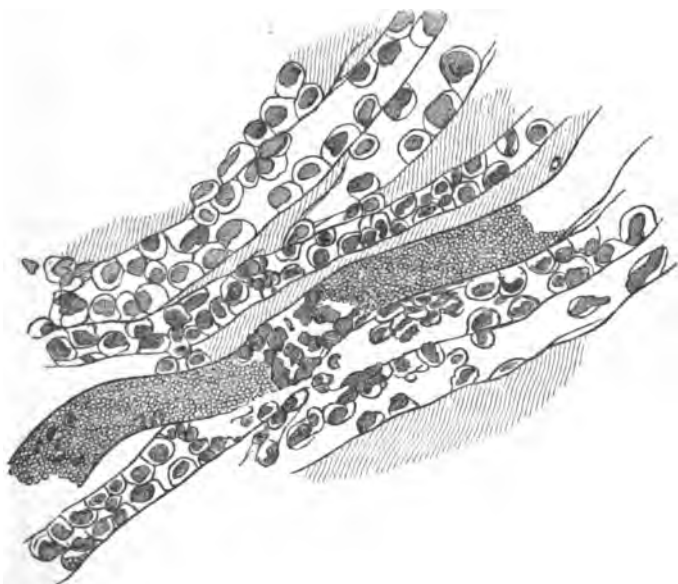


FIG. 1.—Longitudinal section of pyramidal portion, showing a tubule blocked by micrococci, with renal epithelium between the two colonies.

voluted tubules a tubule was seen, sharply bent upon itself. The whole outline of the tubule could be distinctly traced, as well as the epithelium lining its walls, and just where the tube bent upon itself, and evidently contained in it, a small colony was observed.

One point against the organisms being in the blood-vessels is, that none were found in the Malpighian tufts; and I did not detect any of the appearances described by Dr. Coats in a paper on Ulcerative Endocarditis.* I refer to the capillaries, dilated by the organisms, pressing aside the tubules lined with epithelium, and leaving a vacant space between them. In none of the specimens examined did I find this appearance, and, where the colonies were at all definite, they were always continuous with, and not between, epithelium. The very equal distribution of the organisms, both in pyramid and cortex, is in favour of the tubular view.

In order to make out the exact site of the micrococci still more certainly, it struck me to make a number of sections of



FIG. 2.—Transverse section of pyramidal portion, showing one tubule completely, another partially, filled with micrococci, the latter illustrating their tendency to adhere to the wall of the tubule.

the pyramid transverse to the direction of the tubules, and thus get a view of them in transverse section, so as, if possible, to show the groups of micrococci surrounded by epithelium. This method was found to answer very well, and many colonies were found in the transverse sections of the tubules; a drawing of one of the most distinct of these is appended (fig. 2). This view showed another condition of the micrococci, which may possibly be of importance in relation to the

* Notes of a Case of Ulcerative Endocarditis. By J. Crawford Renton, M.B., and Joseph Coats, M.D. *Glasg. Med. Journ.* Oct. 1880.

manner in which they have been conveyed to the kidney ; it was this. Some of the tubules were found not to be completely filled with the micrococci, and where this was the case they were seen adhering to the wall of the tubule, and even, apparently, growing into its substance. It may be proper also, at this place, to refer to another condition, which was noted—viz., that the epithelium of the straight tubules, in many situations and for short distances, was much more deeply stained than was usual. This occurred independently, apparently, of the proximity either of intense inflammation or of distinct colonies, and is, I think, probably to be explained by the presence of micrococci within the epithelial cells themselves, although I am not quite certain of this.

Having thus, as I consider, clearly shown the true site of the organisms, it remains for me to take up the question of their source. The healthy condition of the heart, as well as the microscopical characters which have been fully described above, manifestly disprove the idea of any embolic origin, and show the necessity for seeking the source of the organisms external to the kidney itself, so to speak. The conditions found in connection with the left kidney supply, I think, a sufficient explanation of what was found in the right. Here, as has already been seen, we had a large suppurating cavity communicating by an opening with the external air, and by the right ureter with the kidney in question. Latterly, at least, the wound was not kept antiseptic, and here we have the way opened up for the direct access of germs from the external air to the right kidney. This state of matters fully explains the presence of the micrococci.

Attention should be drawn to the peculiar phenomenon, that here the micrococci have made their way into the kidney against the stream of the urine ; and it illustrates very well the power these lowly organisms have of spreading in the substance of the tissues. It has already been pointed out that micrococci were found adhering to the walls of the tubules, and it is quite justifiable to infer from this that the organisms made their way into the kidney by spreading along the surface of the walls of the urinary passages. In connection with this aspect of the question, it would have been important to have examined sections of the tissues situated between the kidney and the external opening. Unfortunately, this could not be done. Dr. Coats, however, kept a portion of the granulation tissue of the external wound for his summer class. I examined sections of this, but although I found round,

sharply defined, and deeply stained areas, evidently inflammatory, and also throughout the tissue rod-shaped, deeply stained nuclei, neither Dr. Coats, to whom I submitted the specimens, nor myself was satisfied of the presence of organisms.

There is still one question which suggests itself for consideration, and it is this—Are we justified in considering the state of the kidney to be caused solely by the presence of the organisms? Dr. Coats, in the paper already referred to, says:—“It is clear, at any rate, that the micrococci themselves are not a serious source of irritation. It is very possible, however, that their products may be so.” The general truth of this statement is borne out by what has been observed in the present case. One of the most striking features noted in the investigation was the almost complete absence of inflammation in connection with some of the colonies, and *vice versa*. So constant was this condition that the idea at once suggested itself of some of the colonies being more recent than others, and that consequently they had not yet had time to set up the inflammation which was so abundantly and frequently associated with some others. We have also good reason for supposing that the micrococci were not placed in their respective situations *en masse*, but that, very few having been at first deposited *in situ*, they have, to a great extent, grown there. It is quite logical, therefore, to infer that it was only after they had grown very abundant, and their products, as a result, sufficiently irritating, that inflammation ensued. This, however, we think is equivalent to admitting that the micrococci are, after all, the primary and original cause of the whole disturbance.

In conclusion, I have only to add that the examination of this case confirms what was described by Klebs* in his work on Pathological Anatomy, so long ago as 1870. In that work he distinctly recognises the presence of minute organisms in the uriniferous tubules as a cause of pyelo-nephritis; and, in illustration of this subject, he gives a woodcut which bears a striking general resemblance to a camera-lucida drawing I had made of one of my specimens, and which I had executed before seeing that of Klebs. He also recognises that in such cases you may have the organisms scattered throughout the interstitial substance. In the museum of the Western Infirmary there is at present another specimen of pyelo-nephritis in which (although it has not as yet been very care-

* *Handbuch der pathologischen Anatomie.* Von Dr. E. Klebs, Dritte Lieferung, p. 654. Berlin, 1870.

fully examined) this condition is suspected, and which may form the subject of a future communication.

I have to acknowledge my thanks to Professor Gairdner, who has kindly gone over my paper, and to Dr. Joseph Coats for many valuable suggestions.

LITHOTOMY AND LITHOTRITY, WITH EXAMPLES.*

By GEORGE BUCHANAN,

Professor of Clinical Surgery in the University of Glasgow.

IN showing a number of calculi recently removed from the bladder, Prof. Buchanan made some clinical remarks on the cases which had been under his care since the publication of his paper on the subject, in June 1880.

The number of cases of calculus he had seen since the above date was nine, more than he had had for four years previously, an illustration of how such cases, like others, come in runs.

The first three calculi shown were all successfully removed by lithotomy, with the rectangular staff, the only peculiarity being in connection with one, a mulberry the size of a small walnut, taken from a pupil teacher aged 19, and which had caused so much agony that the only position in which he had any ease was sitting cross-legged like a Turk, in which posture he slept at night.

The next case mentioned was that of Mr. K., æt. 73, who was brought by his medical attendant from the country to consult Prof. Buchanan, in his own house. A stone was at once detected, and a day the following week appointed for the operation—lithotomy, as the stone was too large and hard for crushing. On the morning appointed, an hour before the time fixed on for leaving town, a telegram arrived to announce that the patient had died suddenly in the morning. The day before, the urine had become suppressed, uræmic poisoning occurred, and coma came on during the night.

An occurrence of an analogous kind took place in the case of Mr. O., aged 65, a tall, pale, flabby man, with a deep narrow perinæum. The stone was uric acid, the size of a small nutmeg, and seemed favourable for lithotrity. At the first examination,

* Communication, with Specimens, to the Glasgow Pathological and Clinical Society, 8th November, 1881. Reported by Dr. J. L. Steven.

which was done with the scoop-lithotrite, while the patient was in bed, and all prepared for any manipulation, the stone was crushed twice, but the patient complained bitterly of the pain, being a very irritable person. The proceedings were postponed, with the view of next day giving chloroform, and removing the whole at one sitting, by Bigelow's extractor. But within an hour or so a severe rigor occurred, followed by high fever and suppression of urine, which in two days ended in coma from uræmic poisoning.

The next case related was that of Mr. S., aged over 70, who had for long suffered from symptoms of stone, and was now bed-ridden, with ammoniacal putrid urine, and a constant and excruciating agony, for which he often took large doses of opium, which frequently produced toxic delirium. After long suffering, with periods of comparative ease, he at last consented to his medical attendant asking a surgeon to examine him. Prof. Buchanan was selected, having formerly removed by lithotrity a calculus from a gentleman whom the patient knew. Examination detected a large hard stone in a bladder contracted round it. Prof. B. gave a decided opinion that lithotrity was out of the question, and that lithotomy was the only operation admissible, but told the patient and his friends that while the operation would, if successful, most probably free him from the agony he was enduring, it would necessarily be accompanied by great danger, and that they must be prepared for any event. The old gentleman was much disappointed, having been under the delusion that the stone would be crushed and extracted at the visit first made, and he would not give his consent to any operation being arranged for. Subsequently the family requested Prof. Buchanan to prepare to come to the country, and do the operation on the following day, hoping that the father would consent in the interval. Next day, he was informed by telegram that the operation was postponed, and he was not sent for again; but a few days afterwards he saw in the newspaper the death of the old gentleman. On inquiry, he learned that the patient, being dissatisfied that the stone had not been crushed, sent for another surgeon in the hope that he would do lithotrity. This second consultant corroborated the opinion previously given, and himself performed lithotomy. The patient died next day.

The next calculus was from a gentleman aged over 60, who had for many years passed uric acid calculi, frequently followed by rigors and great disturbance of the system. Symptoms indicated that one was now retained in the bladder, and

Professor Buchanan succeeded in catching it between the blades of a small lithotrite, extracting it entire, by gradual dilatation of the urethra, and a small incision of the meatus urinarius, where the stone was firmly grasped. The recovery was rapid. This was in July 1880. In the April following, the same gentleman again felt symptoms of a retained stone. This time it was too large to be extracted entire, so Prof. B. crushed it in four sittings, the peculiar condition of the patient as to his respiration being unfavourable for giving chloroform—at all events long enough to allow of the time necessary for rapid evacuation, by Bigelow's extractor. Circumstances occurred to make it necessary, or at least advisable, to stop proceedings after the fourth crushing, and for two months the gentleman resided in the country, taking exercise and otherwise enjoying himself. In July he again underwent nine crushings at one or two days' interval, and before the 1st August, was entirely free of his calculus. He is now, December 1881, absolutely free from all annoyance. The April crushings evacuated 36 grains; the July operations, 64 grains.

The last case was that of a gentleman, aged 55, who for four years, at intervals, and always after a hard day's hunting, passed a little blood with his urine, with no other symptom. During the last year, pain in the perinæum was present, with occasional stoppage of the flow of urine. He had never been examined with a sound, though latterly opiates had been prescribed for him to allay the pain. At the Autumn Review, in Edinburgh, he had to take an opiate before mounting his horse, and also during the day, and after that exertion more than the usual quantity of blood came with the urine. Shortly after that, he related his case to Professor P. A. Simpson, who at once suspected a stone, and brought him to Professor Buchanan. It was easily detected. The bladder was rather irritable, so that it was necessary to give chloroform. By a few manipulations with a small lithotrite, the stone was caught between the blades and removed entire. It was mulberry, and weighed 12 grains.

As a sequel to the foregoing may be reported a case in which an old gentleman, 75 years of age, had a piece of india-rubber catheter, an inch long, in the bladder. He was in the habit of wearing one which is retained in the bladder, by a piece at the end bent like a knee at right angles. The instrument in question was introduced, and remained *in situ*—as had occurred in the case of two former ones, which he had worn for 8 and 10 days with great comfort. But on the occasion referred to, the catheter gave him some uneasiness,

and two hours after it had been introduced he withdrew it—but to his astonishment he found it without the inch at the end. Professor Buchanan was summoned shortly after, and contented himself with passing a No. 12 sound, to satisfy himself that the passage was not blocked up. Next day, he introduced a smooth scoop lithotrite, and after opening the blades had the satisfaction of grasping the india-rubber catheter end, between them. Very gentle and careful traction succeeded in extracting the foreign body without difficulty.

On examining the india-rubber catheter, it was found somewhat brittle, evidently from long keeping, though it had been got directly from one of the most reliable instrument makers in London. India-rubber instruments, to be safe, must be certified to be of recent manufacture.

ON THE EXISTENCE OF TYPHUS WITH ENTERIC FEVER.

By A. K. CHALMERS, M.B.,

Physician and Superintendent, Joint Hospital, Maryhill, Glasgow.

IN an article contributed to the *British and Foreign Medico-Chirurgical Review*, for July 1859,* Murchison remarks that “there is a prevalent belief that no two of those febrile diseases, which are thought to depend upon the introduction of a morbid poison into the blood, can exist in the system at one time,” and points to the effect of this doctrine when applied to the continued fevers. Indeed, it seems then to have had a special bearing, for, according to him, examples of co-existent typhus and enteric fever were used as arguments against their non-identity. After citing numerous instances of more or less simultaneous attacks, from the exanthemata as well as from the continued fevers, and explaining how the list of illustrations might be extended in the direction of other specific diseases, he concludes that “enough . . . has been done to prove that the doctrine of incompatibility is erroneous,” and that from the occasional co-existence of specific eruptions, we are not entitled to assume an identity of cause.

But, while Murchison's contention may be assumed to have

* On the Co-existence of Specific Morbid Poisons.

now a general acceptance, examples of concurrent attacks, especially of typhus and enteric fever, are sufficiently rare to be still of interest.

The man whose symptoms are detailed at some length hereafter, seems to have had an attack of this combined nature. He belongs to a group of seven cases, formed by members of two neighbouring families, and the interest attending his symptoms is increased by the nature of the illnesses of the others; for, while most of them had typhus, two were believed to have enteric fever.

When his illness began is doubtful. On admission to hospital, he dated it from about seven days previously, and as the rash and other symptoms generally indicated that he was about the end of the first week of typhus fever, the statement was at the time accepted without further questioning. The varied nature of the symptoms arising during the progress of his illness, however, led to further reference to the matter when convalescence was thoroughly established; and it was then ascertained that although the seventh day before admission had in reality marked the beginning of what formed a new class of symptoms, there was a period of about a week and a half prior to that, during which there had been a departure from his ordinary state of health.

During this early time he felt lazy and dull. He could not take the same interest in his work as formerly, and felt tired sooner than was his wont. Chills recurred irregularly. He went off his food a little, and did not feel refreshed by a night's rest. His bowels were constipated. When this state had lasted for about a week, he had a purgative, which induced the diarrhoea mentioned afterwards. With this exception, however, his previous state continued during the following day and the next; but on the third day, the symptoms with which his typhus seems to have begun, set in. The chills gave place to shiverings, accompanied by muscular and arthritic pains, distributed pretty generally, but present with greatest intensity in the lumbar region, lower limbs, and shoulder joints. He had a little cough, and more or less headache, although neither of these seems to have been long continued or severe. His appetite failed him, but although he felt very sick, no vomiting occurred.

He endeavoured to "shake off" this state by continuing to go about, but succumbed, and went to bed on the fourth day. Three days thereafter he came to Hospital; and extracts from the Ward Journal note the further progress of his case.

27th October.—Patient (36), admitted yesterday evening, and when seen later was perspiring freely.* Face dark and heavy, with listless, indifferent expression. Conjunctivæ injected and pupils small. Tongue coated (except over a triangular area at tip), with brown fur whitening toward edges, and fissured transversely.

Typhus rash (spots and mottling), present in a marked form on trunk, arms, hands, and forehead. As yet, only a few spots are seen on thighs, but they are more apparent on feet. Rash can be obliterated by pressure, and does not seem to be of a bad type.

Bowels have been moved three times since admission. This diarrhoea began after a purgative at home. Pulse, 64 per min., soft, but artery pretty well filled.

28th October (9th day †).—Delirium last night, took form of wandering and talking in sleep. He had little tendency to rise. Rash ‡ on pectorales to-day, becoming petechial, and well out on feet; pulse, 84. Breathing 26, and with forcible expiration as in exhaustion. Tongue more dry in centre. Feels weaker. Bowels moved three times during night. Motions loose and copious.

29th (10th day).—Passed fair night. Pulse unchanged. Pupils smaller. Breathing regular and low. Tongue brown. "Typhoid" state mildly developed. Had four motions yesterday, of a greenish-yellow colour, with (the nurses say), a smell resembling that of enteric motions. Next to be kept.

30th (11th day).—Rested pretty well, but talked a good deal during sleep. When awake, he is more sensible, but even then he wanders occasionally, although curiously he seems to know it. Pulse, 84. Tongue intensely brown and fissured. Rash copious, but not darkly tinted. §

31st October (12th day).—Passed a restless delirious night, attempting occasionally to get out of bed. "Typhoid" state more marked to-day. Breathing hard and sighing, but rate as before. Pulse, 80. Tongue hard, dry, and brown. Can't be protruded. Drinks pretty well, and can be roused to intelligent answering. Can turn himself. To have chloral draught to-night if necessary.

* This was the only occasion on which sweating was noticed. It may have been due to bath on admission.

† Of Typhus.

‡ Spots.

§ This may seem ambiguous. The spots were indelible, but had not that irregularly blotched and livid appearance—due to intense blood-staining—so marked in very severe cases, and in those fatal about this time. It is the absence of this that is referred to.

1st November (13th day).—Passed night without draught. Breathing still sighing. Tongue retracted and almost useless. Still understands when roused, and makes feeble attempt to pull out tongue with his fingers when asked to protrude it. Pulse not particularly strong, but not apparently absolutely requiring stimulant. Rate as before. His appearance, when seen quietly in bed, is such as to lead one to suspect a state of prostration, much more profound than is consistent with the efforts patient displays when getting up to stool, &c.

2nd November (14th day).—Condition slightly improved. Slept well last night. Tongue losing contracted form, and moistening at edges, &c.; protruded more easily.

4th November (16th day).—Temperature 100·6°; pulse 72. Breathing quiet. Tongue clean at borders. Rash less profuse, although where (spots) present, still as marked. Very deaf, and lies in a listless half-sleeping condition. Has done so for some days. Passed crisis in this state. Must be shaken up for food, but gets up to stool himself; and on returning to bed, goes off again into this drowsy state.

5th.—Deafness seems to be increasing. Pupils still contracted. Pulse calm. Rash still seen well on back. Tongue has brown stripe (longitudinal) in centre.

6th.—*In statu quo.* To have strong coffee.

8th.—Although temperature is normal, and pulse even abnormally slow, and while his sensations are those of “always improving,” as he puts it, there is an unusual apathy about him, possibly the result of a deafness, which he seems to say is of long standing. He did not, however, seem so deaf hitherto. Motions have all along been enteric in character, the later ones, however, gradually losing the offensive smell. But to-day he has had one, darkly tinted, and giving rise to a suspicion of hæmorrhage.

From this time convalescence was without interruption.

Diarrhœa was a prominent feature throughout. It began, as stated, after a purgative, about ten days before admission, and continued more or less till convalescence was established. In the interval between its onset and his admission to hospital, his bowels were moved from two to four times daily; and the number of his motions daily thereafter is appended along with the temperature record. On 29th October, and presumably the tenth day of his typhus attack, the nurses directed my attention to the nature of his stools. Both nurses, it may be remarked, have had an acquaintance with typhus and enteric fevers, extending over some years; and the peculiar character of the stools, in a case otherwise so manifestly typhus, had not

unnaturally attracted their notice. The specific nature of these motions seemed undoubted. With one exception, they were loose and yellowish, generally copious, and with the peculiarly offensive smell of enteric excreta. Even the half-formed motion preserved its similarity to corresponding motions in undoubted enteric. They were throughout of such a nature that, had they occurred in a case with an ill marked, doubtful rash,—or no rash at all,—and with temperatures and other symptoms affording any support to the suspicion, they would have been taken as diagnostic of enteric fever. In addition to this, in the post-febrile period, and of doubtful significance, there was one motion of a colour approaching a light mahogany tint; and the following one had also this appearance, but in a minor degree. They resembled the motions which immediately follow those containing profuse hæmorrhage, and in which blood may be assumed to be present in a very limited quantity. Patient never had piles; and whereas intestinal hæmorrhage in typhus is an indication of extreme gravity, this man's condition was never such as to require alcoholic stimulation.

Although the characters of the rash never seemed doubtful, the nature of the stools led to frequent and more attentive examination of it. The dingy appearance of the spots, however, their position in the true skin (and not elevated above it as might have been the case before admission), obliterated at first by pressure, but afterwards becoming petechial, the intermixed mottling and wide distribution—in fact, the whole course of the rash, with the manner in which it faded—excluded all doubt as to its nature.

No enteric spots could then be detected, but the nurse informed me that on patient's admission she had seen two spots on his abdomen, which she took to be enteric ones. She did not then observe the typhus rash, but after he became warmed in bed, this came out in so marked a form that, believing she had been mistaken with regard to the two spots first noticed, recollection of them had escaped her until the enteric character of the stools became plain.

Neither was there anything special in the state of the abdominal walls. There was no distension, gurgling could not be detected, nor did he complain of pain. Unfortunately, the condition of the spleen was not then noticed.

A record of the temperatures from the time of admission is subjoined. The characters of a typhus range are more or less prominent throughout; indeed, whatever influence the enteric may have exerted is masked, and this is the more apparent

from the absence of decided and constant morning remissions. This, however, might have been expected from the otherwise predominant nature of the typhus symptoms; and whatever inference might have been drawn in favour of an enteric bias, appearing at the time of admission, from the comparatively late period at which the maximum was attained, is vitiated by a bath which he had about two hours before his first temperature is recorded. The termination of the febrile period again is more abrupt than is usual in enteric; and this is the more remarkable from the continuance of loose motions. These latter were, however, by this time, losing their enteric characters (although the doubtfully hæmorrhagic one occurred two days after this); and an explanation of the ultimate sudden fall of temperature may lie in the possibility that the state of his motions at this time was due to an "atonic" condition of the enteric ulcers. The lack of severity in the enteric, to cause this atony, may have been compensated by the exhaustion of the typhus.

The history of patient's illness, shortly stated, then, is that after a week of indefinite symptoms, enteric diarrhœa is brought on by a purgative, and four days thereafter typhus develops. The continuance of the diarrhœa till the end of the third week may point to a tolerably severe attack of enteric, but the absence of characteristic abdominal symptoms leads rather to the supposition that it did not exceed in severity the "latent" variety.

The connection of this patient with the other members of the group may be shortly told. These others were his wife, a son (13), a daughter (9), a neighbouring woman and two of her children. The son became ill on the last week of September, the father's illness dating from the second week of October; his wife sickened about a week thereafter, and the daughter at the end of the month. The mother and son ultimately came under the notice of Dr. Finlayson, of Glasgow; and through his kindness I have been able to refer to his notes of these cases. In neither of them were the symptoms at any time characteristic, but in both the sequence of events was such as led Dr. Finlayson to suspect an enteric basis. The daughter's illness, on the other hand, was typhus. The rash was present—the mottling was indefinite, while the spots faded without becoming petechial. But there was no succession of crops. She also had diarrhœa—the stools, however, not having any special character. All three of the neighbouring family had typhus. The mother sickened on the second day after

the typhus symptoms of the father of the other family set in; her children, late in November. In each, the characters of the rash were well marked. In two of them, the attack was severe—in the mother especially so; and in her case the rash approached the blotchy character previously referred to.

The occurrence of the first two of the typhus cases, with so short an interval (two days) between, seems to indicate a common origin, or at all events exposure to similar influences; otherwise typhus must be infective at a much earlier time than is generally held. Yet, no evidence of contagion, in either case, could be found; there was indeed, so far as known, no other case of typhus in the neighbourhood at the time. But the houses of both families were dirty and foul-smelling. The house where typhus first occurred was of one apartment, and had eight occupants, and in it the smell was most obnoxious. And if the *origin* of the poison can be assumed to lie here, its almost simultaneous appearance in the other house is easily explained. There was no covered communication between the houses, but the mother of the second family was in frequent attendance on those in the first house; on each visit she was exposed to the vile influences which surrounded them, and she was the first of her own household to sicken.

Temperature Record, &c.

Date.	Day of Illness.	M.	E.	Motions.
Oct. 26,	... 7th	...	103	(before Admission.)
„ 27,	... 8th	102	104·2	3 Loose.
„ 28,	... 9th	103	104·4	4 „
„ 29,	... 10th	103	104·4	1 „
„ 30,	... 11th	102·6	103·6	1 H. F.
„ 31,	... 12th	102·6	104	3 L.
Nov. 1,	... 13th	102	104	4 „
„ 2,	... 14th	101·8	103·2	2 „
„ 3,	... 15th	101·2	102·4	3 „
„ 4,	... 16th	100·6	101·6	2 „
„ 5,	... 17th	100	100	2 „
„ 6,	... 18th	99	98·4	1 „

ADDRESS TO THE MEDICAL STUDENTS, AT THE
OPENING OF THE WINTER SESSION, 1881-82, IN
THE UNIVERSITY OF GLASGOW.

By MATTHEW CHARTERIS, M.D.,
Professor of Therapeutics and Materia Medica, University of Glasgow.

IN accordance with the custom of this University, it is my privilege and duty, as the most recently appointed Professor, to give the introductory lecture in the Faculty of Medicine for the session now commencing. The subject of the discourse is wisely left to the speaker's choice; but it is presumed to be connected with medicine, and with that particular branch which is more immediately associated with his own chair. The subject of my course of lectures during the winter is the bearing of medicine on disease; and this subject has been lately brought prominently before the public. A few months ago in London there was held a Congress which, for interest and importance, may fitly be considered the most remarkable in the annals of medicine. For there were then assembled the most eminent and noteworthy leaders of our art, from this and other lands. And they were brought face to face as they never had been before. They spoke openly, and discussed questions, and expressed opinions in the presence of the public; and, through the press, the public came to take an interest in their proceedings, and to assume, as it naturally should, a judicial and critical tone with regard to the progress of medicine, taking it in its widest and broadest sense.

Reviews, for the most part laudatory, and abstracts, marked by perfect fairness, appeared in the daily newspapers; and from these, and the more extended reports given in the medical periodicals, many who had never thought much of our existence and our views before, except when they were sick, or sickness entered their households, came to talk about doctors and science, and disease and health. The discussion went beyond the regions of lightly read and easily forgotten newspaper topics, and permeated private circles, and formed the theme of conversation in the casual meeting of chance acquaintances.

To men engaged in the business and pleasure of life in a totally different sphere from ours, it was doubtless strange to learn what had been discovered, and what done in recent years. They heard of progress and change, of new inventions and fresh fields of investigation. They were made familiar with

the outlines of medical science, and with its intimate alliance with the health of man, and its bearings on almost every subject connected with the happiness of our race.

It is now an old story to us, but it was new to many to learn of Pasteur's experiments, and the influence they have had on science. Men came to understand that from the elementary facts contained in these, a former professor of this University had revolutionised the surgery of the past by inaugurating, within this city's oldest and largest charitable institution, the present antiseptic treatment of surgical wounds. They learned how this practice had spread from place to place, and how foreign nations, as well as our own, in accordance with the broad and catholic spirit of our art, had adopted the method, and proclaimed with no stinted praise "that it was good."

It must have been strange also to learn how, from the same rich suggestive field, developed by the consideration of fermentation and putrefaction, disease might be stayed in the lower animals; and how a malady, fatal to the hopes of the agriculturist, might be modified and rendered innocuous; and how even a class so humble as our barn-door fowls could be saved from the inroads of a fatal disease, and by inoculation rendered proof against further attacks of the malady.

Still more startling must it have been to hear of the new era opening up in the history of the most common and most deadly of all human ailments, and how tubercle, on which it depends, is an infectious substance, certainly communicable by man to the lower animals when these are fed with it, or are made to inhale tubercle laden spray, and how possibly also it is reproduced in the human subject by the drinking of the milk of tubercular cows.

The wide range of speculation and inquiry opened up in these and kindred subjects, the obvious deductions that could be drawn, naturally made men pause and consider other and more pertinent questions, through which we, as a profession, are called before the bar of public opinion. Whether we wish it or not, we are judged by those whose servants we are, and from whom we obtain the means of our livelihood. Our motives are scrutinised, our inner life laid bare, and our systems and our inherent *morale* keenly inspected. Our deeds are now enveloped in no mystery, nor are our actions read in an unknown tongue. We cannot screen ourselves behind our ancient and noble lineage, nor can we expect sympathy only because of the antiquity of our art. We cannot hope that those of the far distant past will be our protectors. Their learned treatises, their weighty arguments, their subtle nosolo-

gies, their ingenious plans for coping with disease, are judged by the clear and cutting logic of the nineteenth century, and the mere records which they have left us will avail us little, unless they can be used in the living present as true to all time. The age in which we live is peculiar and characteristic. It abjures sentiment. It is intensely realistic. It is distinctly practical, and somewhat sceptical, and before the judgment of this sceptical, unsentimental, utilitarian, and prosaic age we are called and asked for our position and our watch-word, in the face of the discoveries which science is revealing. The question is put by the public to the profession as a whole—

“Have you utilised recent investigations in treating the diseases of everyday life?”

It will be my endeavour to show, gentlemen, in this Introductory Lecture, the true position we can assume, and the answers which we can justly make.

Science has shown that disease, in so far as it generally attacks mankind, may be fairly and legitimately divided into two great classes:

1. Acute zymotic diseases;
2. General diseases and diseases of individual systems.

The diseases of the former class are intimately connected with the investigations of the present day. They have been known certainly in all time, but until lately they have been but little understood. They were huddled together promiscuously. Their origin seemed mysterious. They were distinguished simply by their eruptions, their course, and their fatality, and such a classification and such a conception frustrated their sanitary prevention, and often rendered nugatory all care and skill and hope.

We live now in a different time, and we have stripped off much of the mystery which surrounded their course. We say that they are dependent on particular lowly organisms, that these organisms, entering into the system, produce and reproduce themselves in numbers infinite and possibly definite in form. Their hostile inroad is marked by an unvarying period of incubation, and when this is completed they seem to awake to life. They then impair health, nullify animal vigour, and produce increased combustion and fever. Moreover, we can truly say, with reference to these organisms from which they originate, that like produces like and that alone, and that a specific fever, the outcome of their multiplication in the human body, will retain its inherent characteristics, and never, however weakened the system, merge into another. Thus small-

pox produces small-pox; scarlet fever, scarlet fever; typhus, typhus; and typhoid, typhoid. Familiar examples of their definite course are seen by their attacking, in one instance, one part of the frame, in another leaving that untouched and implanting themselves in a different place. Thus the poison of typhoid inhaled directly, or, in the great majority of cases, swept into the system by fluids impregnated by the disease, locates itself in a certain part of the intestine, and from there its symptoms and chief complications proceed. Typhus again, fortunately now more rare, strikes at the centre of the nervous system, and leaves the digestive tract untouched. The germ of scarlet fever fastens on the throat, and, according to the severity of the disease on this its primary site, do we rightly apprehend the malignant or simple type of the malady. The diphtheritic poison, though visibly attacking the same part, seems also to permeate and implicate the whole glandular system.

True, we cannot catch the individual germs in which these diseases originate. We cannot place them on the microscopic slide and say, "Lo! there the germ, there the embryo of the race's fatal enemies." But that they do exist no one attempts to deny, for it is the only logical conclusion to be drawn from the history of the maladies. Their etiology, based on definite facts, is now known beyond the professional pale, and has become the household information of every well educated and intelligent man. The knowledge is also imparted that, while sanitary science has done much to destroy their virulence and impair their epidemic type, it cannot and never will be able to prevent their quasi-epidemic or sporadic character. We may exercise all the ingenuity which care and experience suggest in the building, ventilating, and draining of our houses, but yet we can never live in a perfect Hygeia. After all our precautions we cannot say that here no stray enemy shall ever enter. The story of every city's death-rate falsifies such expectations, and the educated public, nay, even the ignorant public, ask our position in the face of such patent facts. It says: We know now of the existence of these organisms—how they live and die apart from the human frame. We are cognisant of where they exist and how they multiply when they are part and parcel of the individual human life. So far the way seems clear, for so far the light seems brilliant, and it is for you physicians and therapists to tell us, if you can, how they may be destroyed when they have gained an entrance there. Have you solved, or are you attempting to solve, this problem?

The answer might be made that diseases so engendered tend to exhaust themselves. Nature rebels against such unbidden and unwelcome guests, and we aid her efforts by careful hygienic surroundings and judicious diet. We open windows, yet we strive to prevent draughts. We stimulate nature's efforts and we give nothing that is hurtful. We attend, as Sir Wm. Jenner happily expresses it, to the little things connected with the sick bed, and we await with confidence the result, we trust to nature. This answer, plausible though it seems, deceives no one. It is the confession of defeat, and necessitates the further enquiry, can you do nothing more? Do you leave the matter always thus even when the contest is too severe and life is in danger? Your instruments of precision show when this is the case. The daily touch of the pulse may be a false and feeble guide except to the experienced few, but the veriest tyro can tell, by thermometric observations, how the combat wages. By such means apparent to all, paid watcher or attached friend, it is known that if hyper-pyrexia supervenes or continues for a definite time all chance of recovery is impossible. In the struggle life must be lost.

Have we means to avert a pyrexial crisis? Can we lessen fever heat? This is no angry contest, as our forefathers thought, of vital spirits and disease. No superhuman agency is at work, and we must fight the chemical process of combustion going on, having increased heat as its most pronounced phenomenon.

It is only within the last few years that we have been able to speak, and speak emphatically, about antipyretics or antizymotics, and to employ them confidently as the occasion may require. The experience of continental hospitals and of our own testifies to their existence, and statistics prove their utility. We proceed to use them in a systematic manner and according to the exigencies of each particular case. We desire to withdraw the heat from the body, to give rest to the weakened and exhausted heart, and our means of doing this are twofold, either by medicinal agents or the direct withdrawal of heat by baths at a regulated low temperature.

The former way is much the less formidable looking. We lessen the fever directly by destroying or paralysing the life of the germs by which it is produced. We introduce into the system a potent drug, and we confidently say that by so doing we can reduce the fever heat. We employ it in large doses, and if the irritated stomach reject it we can introduce it hypodermically and sufficiently concentrated so as more

directly to effect its purpose. We fear now no cutaneous abscesses, for the risk of these has lately been obviated by the medium in which the drug has been dissolved.

Thus, read by the light of recent investigations, do we understand the time honoured and, at all time, priceless virtue of Peruvian bark in the fever of tropical lands. Its mysterious action is now revealed. It is specific, but we know the cause of its specific action. It destroys the life—the poison life of the malarial germs, just as it can keep milk sweet or prevent meat from putrefying. It has a direct antagonistic action on these germs. So also it acts in a minor yet appreciable degree against the infectious poisons of our country's continued fevers, typhus and typhoid. It reduces though it does not actually destroy the vitality of the germ on which these feed. It produces a distinct intermission of the pyrexia, and by so doing calls in time a most important factor to our aid. It thus obviates a great element of danger and promotes all reasonable chances of recovery.

The discovery of the fact that this antipyretic agent had this action was a powerful stride in therapy. The fact also that though potent in one fever it is inoperative in others paved the way for further investigations. Against the crushing pain and the total prostration of acute rheumatic fever it did little or no good. Here the poison also is probably malarial in its origin, but the germs are of a different kind, and have to be destroyed by a different agent. Therapeutics has, therefore, through the efforts of a Scotch physician, successfully called to its aid the bark of the willow tree, long neglected and indigenous to the soil where rheumatism is more rife. Its action is similarly explained, for it also is antiseptic and antizymotic.

It is possible, also, that against the germ which makes the name diphtheria a word of evil omen in every household we have in a newly discovered drug, pilocarpine, an antidote as potent as some confidently anticipate and all eagerly desire.

Light has not yet been shed on the specific treatment of other febrile zymotic diseases. It will come sooner or later, and until it does so we must avail ourselves of the means we have at our disposal. We must increase the discharge of fever heat by tepid baths, or by drugs lower the action of the heart, and diminish the force of the circulation.

Such answers, then, may be given by the profession to the public about the progress of art in diseases which come home with startling force to peoples and communities. They

show the affinities of the rightly applied medicines and therapeutic methods of the present day. They indicate the principles on which they are given, and these principles are based on well defined scientific lines. The idea is communistic, for it has the imprimatur of men of every land. The progress is recent but it is great, and it bids us hope for more. The field is vast but the labourers are many, and judging from what has been so rapidly accomplished, we may confidently anticipate with Binz, of Bonn—"that pharmacology interpreting the etiology of infectious diseases may yet discover specific antidotes for each"—or with Huxley, state "that it will become possible to introduce into the economy a molecular mechanism which, like a very cunningly contrived torpedo, shall find its way to some particular group of living elements and cause an explosion among them, leaving the rest untouched."

With regard to those diseases, then, so important in themselves, and in their consequences so frequently disastrous, there is not at the present time, to the impartial eye, much division of medical opinion. There may be a few dissentients who love to stand on the ancient pathways and swear by the Shibboleths which gladdened their hearts in their youthful days, but they represent only a body small in numbers and unimportant in influence. They cannot question the facts. They only carp at the theory.

The aspect is, however, changed when we are asked by the public our position as a profession in relation to other diseases not dependent on germ life, but attacking either the body generally or individual systems of it. This has been ever a fertile field for cavillers to sneer at, and in the divergent views held they love to point the moral of a discordant art.

In what follows of this lecture, I ask you to remember that I am only expressing my own ideas and giving utterance to my own convictions. They may be right or they may be wrong. They are mine, and as such let them be judged.

On the investigation of remedy *versus* disease—the crucial point on which the question turns—this, I think, may be considered as generally conceded, that every remedy must be adjudicated upon in connection with the natural march of the malady it is given to cope with. If this be slight and harmless, if nothing will go wrong if ordinary care and common sense be exercised, then we cannot attribute extraordinary merit to any drug selected and prescribed. All unprejudiced men say it is inadvisable and imprudent to shoot from our

therapeutic quiver when no enemy is near. It only raises the laugh in such circumstances to count the foes who have fallen. Thus, if abstinence from particular food and the regulation of what is appropriate, be sufficient to appease an injured and offended stomach, no one could dream of shouting and recounting the triumphal march of drenching cathartics and ill advised cholagogues. If, again, general malaise is attended only by slight fever, and is succeeded by merely trivial reaction, and by no other marked or important symptom, then it is ill judged to be fussy and officious, and to order rest in bed, and potent sudorifics, when a well regulated bath and pleasant surroundings form a better, quicker, and more natural method of stimulating nature's emunctories. In various forms of mental disease, in the vague terror and unsubstantial delusions which disturb the life, and it may be, if prolonged, veritably undermine the health of some hysterical females or hypochondriac males, why laud antispasmodics? In such cases we often find these equalled or surpassed by the chilling refrigerator of the outspoken remarks invested with professional authority, or by the well judged advice to increase strength by exercise within the patient's power.

A recital of drug cures in circumstances like these is unnecessary, when a candid explanation of, and intelligent sympathy with, the patient's state is the best, most truthful, and, in the long run, most paying recipe. The description of the action of remedies in these cases is ludicrous, and recalls the words of the Roman satirist, "when the horse's head was joined to the human form." Our journals, formerly prolific in relating wonderful cures, rarely now overload their pages with such vain and idle tales, and in so acting they do well.

But there are other maladies not so trivial in their nature, not so innocuous in their course, which are met with in practice every day, and where life, it may be, hangs in the balance, and for these are we to act in a similar way? We are called in, for the instinct is strong in man, and has been so in all times, to try something in disease, no matter how fatal or how hopeless it may seem. The physician, then, represents the high and holy union which rendered the persons of our predecessors divine. He is the vague embodiment of superior knowledge, which awakened superstitious dread. He is the master of the situation, and, as such, is recognised in lands the most savage and countries the most civilised. His lightest wish is law. Like *Pallida Mors*, in whose shadow he walks, his knock is heard at the peasant's hut and at the palace of the king.

If to this yearning appeal the oracle is dumb—if he stands there, the faithless exponent of the healing art, and suggests nothing and knows nothing, then his visit is one of evil omen. The sick man “turns his face unto the wall and dies,” for the raft to which he clung has failed him in the hour of need. The crisis had come, and he was left as best he might to fight amid the surging waters of disease, when action might have sustained him, and cheering counsels might have brought him through sore buffeted to the further shore. To the sick man this conduct is death. To the friends and to the public it is cool and heartless cynicism, and an open confession either of incapacity, or of lack of care, if not of both. To the impartial critic it means “medical suicide,” for he sees that if the policy of expectancy is carried to its legitimate conclusion there is a sapping of the foundations of therapeutic faith. There is a lowering of the public interest in scientific inquiry. There is no use in “having doctors at all.”

The position assumed is no imaginary one. It is openly advocated by some. It is attempted to be justified by others, because it is better to leave well alone in our efforts to deal with disease, lest by stumbling strokes of medical aid we do more harm than good. We may stab (they say) the salutary recuperative efforts of nature, instead of inflicting any injury on the malady. We thus adopt the Fabian policy of delay. Such a doctrine is properly fatal to our position in the eyes of the public, and it is necessarily false to the best interests of the profession (and, besides, it is not in accordance with present facts). The acquaintance with pharmacology is based on intelligent premises. We endeavour to test the actions of medicines by the methods of research inaugurated by Morgagni, and followed up by his successors in the present day. It is needless here to state what these methods are. It is sufficient to aver that in the eyes of men most competent to judge they are excellent. They have led to a more correct appreciation of the value of individual remedies, for they have determined how each drug acts in health in relative parts of the body; what it specially affects, what it leaves untouched. Its exactitude so far cannot be questioned, and the knowledge so acquired is applied to special forms of disease with a confidence we had not before. Thus it has narrowed the field of particular drugs. It has loosened the hold of empirical remedies. It has dismissed much of the polypharmacy which overshrouded vague and unseemly mixtures, and obliterated the triumphs apt to be assumed by incongruous

ingredients. It makes prescriptions simpler and less fortuitous in their scope.

Therapeutics takes up a position which is critical but not antagonistic to its ally. It acknowledges that physiology is not medicine, and that we cannot trust to it alone; for we must recollect that the most significant testing ground for medical agents is the hospital ward and actual practice. It states that the action of a medicine may be accurately described so far as it affects a healthy human being or animal. Its influence on digestion, on the circulation, on the respiration, and the nervous system may then be unquestioned. But disease cannot be imitated, and a man in health and the same man in disease are two dissimilar entities, so far as the action of the medicine or particular drug is concerned. We take it up, therefore, with no preconceived theory as to its efficacy. We try it at the sick bed, and if it succeeds we hail it with gratitude. If it does not succeed, or only imperfectly so, we say that it has not answered its purpose, or probably that it is inferior to some better known and more trusted friend.

Looking at what has already been accomplished by the cordial working of these two methods, I can truly say that I know of no disease, unless pronounced hopeless by its nature, which cannot be benefited by medical aid. I mean by this not the nurse's attention, but the physician's skill. In some things we may have conflicting statements. We may have different roads proposed, strangely opposite methods recommended, and it may be puzzling to the young beginner to know which to accept. Time will solve these perplexities as it has solved many a harder problem. If a remedy is found good only in one man's hands and not in any other's, it will not long occupy a prominent place in the therapeutic roll-call. It soon sinks to merited oblivion.

On the other hand, ours is an open creed, and if merit there be time will place it in the proper niche. So I read the history of medicine, and so to him who reads it rightly it can never be a gloomy or despondent tale; for even when the night seemed darkest, and success most doubtful, was the dawn most near.

A very bleak prospect stretched before any one who, a hundred years ago, surveyed the therapeutic future of the most loathsome and the most deadly of our eruptive diseases. For there was no cordon so strict as to bar its infectious course, and no drug so strong as to curtail its hideous march to disfigurement or death. It pulled down the strong man in his strength, and defaced the fair features of a woman's

beauty. It seemed to be the hereditary curse of mankind—a something to remind him, in his pride and his glory, that he and his were mortal. To say, then, that anything could be done to avert it would have been deemed false to those who had studied the malady and profanity to those who were not within the pale of our art. It was the inevitable disease. Yet against this inevitable disease, the stout heart of Edward Jenner, aided by no great pathological lore, and endowed with no extraordinary gifts, took up the contest. He was sneered at when he expected sympathy, and sorely discouraged by many failures. Yet he struggled on. He knew not defeat, and despite of the predictions of lukewarm friends and open foes, the sturdy fighter had his reward; and in the proud galaxy of names which adorn our country's history, we have not one dearer or more deserving of honour.

To subdue pain, necessary pain, was the familiar dream of the earliest practitioners. General measures had been tried, and Chinese legends show in the third century that the surgeon, previous to amputation, intoxicated his patient with Indian hemp. The succeeding ages had used, with varying success, all the anodynes now familiar to us. Local means had been attempted when general methods failed. These, too, had been found unsuccessful, and in 1839, looking back over many trials and many falsified expectations, Velpeau said mournfully—"The avoidance of a pain in operation is a chimæra we have no right to pursue. Cutting instruments and pain in operative medicines are words which the patients always associate together, and which are necessarily associated." Yet, in less than eight years from the time Velpeau uttered these words, Simpson inaugurated the second great therapeutic era, and told a wondering world of what chloroform could achieve.

Within my own recollection, it was whispered that a certain drug did good against the *morbus sacer*, the falling sickness, as no other drug could possibly do. It was tried by many and given by some in timid doses; it failed; and men cried what folly to expect aught else. Others more persistent and more hopeful repeated the effort in larger and more continuous doses, and you now reap the reward of persevering and loyal faith, for by the alkaline bromide most cases of epilepsy can be cured and all can be distinctly alleviated. These three examples are acknowledged certainties. Their potency no one can gainsay. They are the legacies given to us as the fruits of former toil. If we, too, labour in the present in the same patient and determined manner, our reward will come, though it may not

be so quick or so manifest. It may not come to us in our day, yet the impress of honest work can never be effaced. If it is true, it is a patrimony we bequeath to our descendants, and it is a possession which time may improve but never materially change. Thus, as Maurice Raynaud said, "we have received from our ancestors opium and quinine, and nearly all our best medicines, which have done us good service and will do us still more before we definitely fix their mode of action; and we, in our turn, leave to our sons chloral, the salicylates, pilocarpine, and many other substances discovered and appreciated in our time, but whose uses will be widened by further research and more prolonged experience."

We are recipients of a trust, and he who is faithful to this will cherish it without seeking to deface the landmarks on which it rests. The cardinal point of our profession has ever been the giving of medicines in aggregates sufficient to produce physiological action, for without this there can never be therapeutic gain. If we keep this steadily in view, we find in the whole history of medicine no encouragement given to us by the career of those schismatics who have left our ranks. By what they afterwards accomplished they have done nothing. They can do nothing, for their infinitesimal quantities are contrary to every principle which science reveals and practice accepts. In every case where medicine has left its mark on disease no feeble policy has guided the hand. It has ever been strong, and vigorous, and active.

Future graduates of medicine, carry the hope of progress with you into the work of your after life, and you will feel yourselves loyal sons of men whose names are dear to every student's heart. Deal gently with the weaknesses of the old masters, as revealed in their writings, and with no scornful hand lay bare their errors in judgment and discrepancies in treatment. They failed in much but they achieved much, and in the dim and shadowy past in which they lived, remember that their lights were feeble as compared with yours. Seek not to destroy the belief in the *Ars medicandi* which they helped to rear with great labour and which they cherished with faithful care.

"The proper study of mankind is man," and man sends for you to study him, not in the glow of his physical strength and pride of intellectual might, but in his day of danger and hour of bodily weakness. He does so in the hope that you may do him good, and not that you may regard him simply as an instructive and interesting case of physical or mental decay. Remember this in the time of your pupillage, and when you

have passed from the threshold of this University into the busy pursuits of your after life, and so reflecting and so acting, your student days will be true and earnest, and your future career sustained by the rich reward of merited success.

Place before you no other standard, however seductive the prospect, than the desire to diminish the suffering and extend the term of the troubled years of those who have trusted themselves or theirs to your honour and your skill. The mission you have chosen is noble, see that you walk worthily and warily in the attempt to fulfil the work of your choice.

A CASE OF SPONTANEOUS LATERAL SCLEROSIS OF THE SPINAL CORD AND ONE OF POLIOMYELITIS ANTERIOR.

By JOSEPH COATS, M.D., GLASGOW.

(*Read before the Medico-Chirurgical Society of Glasgow, 4th Nov., 1881.*)

SOME time ago I brought before this Society the subject of descending lateral sclerosis of the spinal cord,* and I showed sections of various parts of the nervous system illustrative of that condition. The case was one of hemiplegia, and the motor strands had been interrupted three years before death by a softening, the result of embolism, in the region of the corpus striatum. As a result of this interruption of the motor tract there was a degeneration of the motor fibres, or a sclerosis, right down from the seat of the primary disease to nearly the lower end of the spinal cord. It was possible in transverse sections of the crura cerebri, pons varolii, medulla oblongata, and spinal cord, to trace the course of the degeneration, and, by inference, to determine the locality of the motor fibres in these parts. In the spinal cord the degeneration was in the lateral column on the side opposite to the lesion and chiefly in the posterior parts of this column.

In that communication it was observed that this degeneration of the lateral column is usually supposed to be related to two signs which are often prominent in cases of hemiplegia which have persisted for some time; these are rigidity of the muscles, and increased tendon reflex. We are

* See *Glasgow Medical Journal*, April 1879.

here concerned with the late rigidity of hemiplegia, which gradually develops and only becomes considerable at a period somewhat removed from the original seizure. In its most aggravated form it assumes the characters of permanent contractures and deformity of the parts. The exaggerated tendon reflex is not of such late development, but it too comes on some time after the original lesion.

As confirmatory of the relation between these symptoms and the sclerosis in the lateral column, I referred to the fact that a form of disease has been observed in which these two symptoms occur, along with paralysis, spontaneously. This disease, in its clinical aspects, is frequently designated Erb's spastic paralysis. At that time it was only by inference that this disease was associated with sclerosis of the lateral columns, but the inference was very strong. Since then at least one case has been observed *post-mortem* (shown at International Medical Congress, by Dr. Dreschfeld) in which the inference was completely confirmed.

I have brought here a patient who presents in the most typical form the symptoms referred to. These are the three pronounced signs of the disease—paralysis, rigidity, exaggerated tendon reflex. Most of the chronic advancing degenerations of the cord begin in the lower limbs, and so it is in this case.

The reports of this and the next case have been very ably abstracted from the journals by Dr. John M. Young, the resident physician.

E. G., æt. 15, was admitted into Ward VI, on 13th October, 1881, with most of the characteristic symptoms, positive and negative, of Erb's spastic paralysis. The approximate date of the commencement of her paresis might be said to be *one year ago*—the subsequent progress of the disease having been gradual and almost imperceptible. The leading facts of her condition on admission were as follows:—

(1.) Marked rigidity of both lower limbs—that of the right limb more extreme and of an earlier date than that of the left. The rigidity was greatest in the muscles which move the knee and the hip-joints, and only permitted flexion, extension, and abduction of these joints by using considerable effort. The ankles were not so stiff, and the right foot had already assumed a distorted position resembling that of talipes equino-varus. This appearance was present in the left foot, but to a much more limited extent. When lying on her back the lower limbs were extended and parallel to one another. To attempt to separate the limbs violent resistance was offered by the adductors—and any movement imparted to one limb was

coupled with a movement of the other in the same direction—the two limbs moving in one piece.

The patient, however, without much difficulty, could flex both knees, but there was little or no power of movement at the ankles or the joints of the feet.

When placed on her feet, she was found to be quite unable to take a step forward without holding on by a person or a piece of furniture. The mode of progression was very characteristic. She made a very imperfect attempt at walking movement, the feet seeming to cling to the ground as if glued to it, and to slide forward with a scraping noise, the right foot especially gradually turning round so that the dorsum looked downwards, in which position it ultimately hung without any further effort at progression. When, however, the patient was raised by the shoulders the same scraping movement was repeated. There was absolutely no spastic condition of the body or upper limbs.

(2.) Marked increase of tendon reflex and ankle clonus; other skin reflexes were diminished, or at least not increased. The slightest tap on the patellar tendon, especially of the right side, was sufficient to produce a violent jerking; while the usual manipulations for ankle clonus determine indefinitely continued and violent spasms. The rate of contractions in the clonus was determined by a graphic method to be approximately 400 in the minute. The clonus, like the knee reflex, was perceptibly more powerful and more easily elicited on the right side.

(3.) There was entire absence of all sensory or trophic disturbance—no vesical disorder, or symptoms of cerebral lesion. All the vital functions were performed in a normal manner.

The patient referred to a pain in the back, usually between the shoulders—which has existed at intervals for five or six years. A slight prominence of the spine in the neighbourhood of the first lumbar vertebra was discovered, but was found to be absolutely free from tenderness and not distinctly morbid in character.

Details of the history before admission are scanty, but it may be accepted as approximately true, that up to six weeks before entering hospital she was able to walk, although during the preceding ten months gradually increasing paresis was rendering progression more and more difficult. It seems also likely that the right leg had already suffered to a considerable extent before the implication of the left.

The patient is an anæmic girl, in whom the signs of puberty are imperfectly developed.

The ætiology is quite uncertain. No hereditary disposition can be made out. No constitutional disease can be inferred, and no local cause ascertained.

1st December.—Since admission the spastic condition of both legs has become more marked; but, as yet, the arms have escaped. Progression has been absolutely out of the question for some weeks, owing to the rigidly extended condition of the lower limbs. She cannot now, without the utmost difficulty, bend her knees to a slight extent. No other positive symptoms besides those enumerated have made their appearance—if we except some flying pains in the right leg, which troubled her for a few days after galvanism began to be applied, but which disappeared when this treatment was dropped.

Nitrate of silver has been tried, but with no evident effect. Also, as already mentioned, a weak continuous current was applied to the lumbar spine daily for about five minutes, during a week. The positive pole was placed upon the abdomen, and the negative on the spine, the labile method having been the one adopted. The reason of its so soon discontinuance is mentioned above.

Having now described the case we have to endeavour to relate the symptoms to the lesion which we infer to exist in the spinal cord. The lesion consists essentially in an interruption of the motor fibres proceeding from the brain to the spinal cord. This is a sufficient explanation of the paralysis. It does not matter where these fibres are interrupted, whether high up in their course or low down; there will be paralysis if they are interrupted before they find their termination in the spinal cord. These motor fibres do not pass directly into the motor nerves, but find their termination in the cord itself, that is to say, in the ganglion cells of the anterior cornua. It is because these ganglion cells are spared while they are cut off from the higher centres that we have the symptoms peculiar to this disease. These motor centres in the cord act in an uncontrolled and somewhat unruly fashion, and so we have these peculiar muscular phenomena. In my former paper I entered into the discussion of the relation of the lateral sclerosis to the spasm of the muscle with some degree of fulness, and it is not necessary to repeat the whole argument here. It may be sufficient to remind you that the ganglia in the anterior cornua being set loose from any control by the higher centres, are all the more exposed to indirect stimulations. We know also that as a general rule

when a lower centre is set free from a higher it reacts much more readily than before, is more irritable. There are stimulations of the reflex order from the surface and we shall see that to one class of these they react with peculiar vigour; there are stimulations reaching them by circuitous routes from the superior parts of the nervous system. The lesion itself in the lateral columns may have something to do with the irritation of the anterior cornua. In the case of hemiplegia the sclerosis is probably a purely passive process, it is primarily a degeneration, but in the spontaneous form it is probable that more active inflammatory processes are at work. These inflammatory processes will irritate the fibres while they destroy them, and the irritation will be conveyed in regular course to the ganglia in the anterior cornua.

In this way I think we may account for both the peculiar symptoms present here, they are both to be traced to a special irritability but also a kind of irrational activity of the centres in the anterior cornua. There is the great spasm of the muscles generally, so that the legs are almost like rigid columns, and it is difficult to draw them asunder or bend them. There is the exaggerated tendon reflex and ankle clonus. The slightest tap on the patellar tendon causes the most violent contraction of the quadriceps. The ankle clonus is highly developed, a sharp dorsal flexion of the foot sets going a perfectly rhythmic contraction of the gastrocnemius muscle. I have here some tracings showing the regularity of the movements of the ankle clonus. They were obtained by holding a pencil against a revolving cylinder while the hand also held the rhythmically moving foot. These tracings show the rate to be about 6 or 7 in the second. Gowers has found that this is the regular rate in these cases, and it is the rate also of what may be called the normal clonus. I am able by resting the right forearm on the table and raising the hand to set going a perfectly rhythmical clonus, which as these tracings show has a rate similar to that just mentioned. Again, if the ball of the toes be placed on the ground and the heel raised, it is possible to produce a clonus having a similar rate. These facts seem to indicate that the centres in the cord have a certain rhythmical periodicity in the issue of impulses. It is of some interest here that the ordinary skin reflex is not exaggerated, is even diminished, and I believe that this is not uncommonly the case both in hemiplegia and spastic paralysis. The reflexes which have the most direct connection with the motor centres in the anterior cornua are exaggerated but not the others. I know that Gowers and Westphal have seriously

raised the question whether this so-called tendon reflex and the clonus are really reflex phenomena. I am not prepared to discuss this question, but whatever be the real answer, the phenomena at least indicate a greatly increased irritability in the centres in the anterior cornua of the cord.

Before leaving this case there are still two facts which bear on the locality of the lesion, especially when the case is contrasted with the next one. There is here no marked emaciation of the muscles. Their very activity may perhaps account for this, but it is, as we shall see presently, to be related to the persistence of the ganglia of the anterior cornua. The other fact is the preservation of the irritability to Faradic stimulation. We found that the muscles react quite normally to the interrupted current.

It is noted in the report of this case that there is no rigidity of the ankle, and that there is even an unusual looseness of it. This along with the entire absence of ordinary reflex action in the right foot induces me to think that the anterior cornua in the extreme lower part of the lumbar region are becoming involved. Considering the close connection of the lateral columns of the cord with the anterior cornua we are prepared for such an extension, and this would be indicated by the occurrence of such lesions as those exhibited in the next case.

Turning now to the next case we find that the only thing it has in common with the first one is the paralysis. The case is one in which a condition exists in the adult essentially similar to infantile paralysis, and it is sometimes called, rather clumsily, infantile paralysis in the adult. The lesion in infantile paralysis undoubtedly involves the ganglion cells of the anterior cornua, and in this analogous disease in the adult the locality is the same.

The case is that of a man, A. McC., æt. 20, a shepherd from Mull, admitted into Ward I, on 14th Sept., 1881, with a paralysis of his right leg.

It was found extremely difficult, from the fact that patient is only partially acquainted with English, to arrive at any detailed description of the onset of his illness, or at any clear conception of the sequence of events since its commencement. It may, however, be taken as pretty certain that about 14 months before admission, he was laid up for eight weeks with an attack of fever and pains, chiefly concentrated in his right leg. A severe wetting seems to have been the starting point. Treatment was directed under the impression of acute rheumatism. When, in about two months, he was able to walk

about a little by means of a stick, he found his right leg quite powerless, and always cold, and it was not long before he noticed a gradual diminution in the size of it setting in. Nevertheless, he is conscious that, when admitted, the paralysed leg was a little stronger than it had been immediately after the acute period. Upon admission, the following were the chief facts recognised:

(1.) The right leg from the knee downwards was almost completely paralysed. In walking, the foot swung round in a typical paraplegic style—and, when put to the ground and bearing the weight of the body, the segment of the limb below the knee appeared more like a passive support than a living regulator of equilibrium—while he lay in bed the foot and leg hung outwards in the cadaveric position. When asked to draw up the leg, he did it with extreme difficulty, and only succeeded in half-flexing it at the knee. From this position he was totally unable to straighten it. In making any movement of the leg, he was observed always, as it were spontaneously, to use his hands to put the leg in the required position. When asked to move the toes, he makes a vigorous effort; but, while the toes of the other foot make considerable movement, those of the right remain absolutely still.

(2.) The muscles of the leg are greatly atrophied—and those of the thigh and hip to a rather less extent. A difference of from 2 to 2½ inches was found between the circumference of the two legs, and of 1 to 1½ inches between those of the thighs—the difference in measurement between the two thighs was thus not only striking, but there, as well as in the leg and the hip, the muscles felt exceedingly lax and flaccid. Emaciation of the right buttock was quite apparent. When placed on the face so as to expose the buttocks, the flattening of the right was striking; the left buttock standing out as a plump red mass, firm to the feeling, the right flat and soft. The middle fold between the nates projected beyond the middle line to the right. On the left side, again, between the buttock and the thigh, there were found to be two folds, while on the right there was found but one.

All of the joints also were found loose, especially the ankle, which, when moved from side to side, shook about in a very loose fashion.

(3.) The sensibility of the skin was found undiminished—to pain, to tickling, or to temperature. The skin, however, was flaccid, and was bluish-red in colour, most marked in the foot, over the knee, posteriorly over the calves and thighs, and over the hip. A white mark, produced by pressure over these areas, was long in disappearing. The surface temperature,

taken at a subsequent period, showed considerable diminution of heat in the paralysed leg. A difference of about 5 degrees Fahr. was found between the temperatures of the two limbs.

(4.) Knee reflex and ankle clonus were found to be abolished.

(5.) The entire muscles of the leg and hip were found to be absolutely without reaction to both the Faradic and galvanic currents—the only possible exception being a slight contraction of the adductors of the thigh. The change was very striking immediately on passing Poupart's ligament, the abdominal muscles reacting to the slightest stimulus.

Under treatment (Faradic and galvanic current, both having been tried) very little, if any, progress has been made. He was dismissed on Dec. 4.

The contrast of this case with the last is exceedingly striking. We have here a young man presenting in his right leg almost all the characters of infantile paralysis. From the early symptoms of the case, it would appear that the disease began in a short inflammatory attack mistaken for rheumatic fever. It was accompanied by severe pains in the leg. We are to suppose that at this time there was an inflammation of the anterior cornua on the right side at a point corresponding with the centres for the right leg. It is to be remarked that, as in most of these cases, the paralysis seems to have reached its full extent at the very first. It is noted that after eight weeks in bed he could sit up but could not walk; but he is now able to use his leg for locomotion to some purpose.

In this destruction of the ganglia of the anterior cornua, we are to look for the explanation of all the symptoms presented. There is paralysis, because the conduction from the brain to the muscles is interrupted by the breaking of this link in the chain. There is absence of the tendon reflex and of ordinary reflex action, because the motor centres of reflex action are wanting. The absence of rigidity in the muscles is also due to the fact that there are no centres in the cord to keep up any tonic or other contraction. The emaciation of the muscles and their extreme laxness are here very striking, and you know that this is an equally prominent feature in infantile paralysis. It would seem as if the centres for the nutrition of the muscles were the same, or at least in the same locality as those immediately commanding their contraction. That is to say, the motor centres in the anterior cornua are also trophic centres, or else there are trophic centres side by side with them. The emaciation of the muscles, therefore, is not to be ascribed merely to their disuse, but is largely related directly to the lesion in the spinal cord.

THREE ATTACKS OF SCARLET FEVER WITHIN TWO YEARS IN THE SAME PATIENT.

By RICHARD PRICHARD, M.B., C.M.

THE following case is interesting, from the fact that the patient has suffered from three distinct attacks of scarlet fever. For each of these attacks he was treated in Belvidere Hospital :—

On the first occasion he was admitted on the 12th February, 1880, under the care of Dr. Chalmers, whose notes of the case in the Journal I here insert.

"J. M'D., æt. 24 years, machinist; married. This is the fourth day of illness, which set in with vomiting, sore throat, and abdominal pain; and followed by *scarlet rash*, which is present on admission. On hands it faintly resembles scabies, from the presence of a large number of sudamina. Usual treatment.

14th February (sixth day of illness).—"Desquamation present to-day on hands and neck. Allowed to get up on 14th March. Dismissed well on 3rd April."

He was again admitted on 15th January, 1881, under the care of Dr Walker, who reports the case as follows :—

"Three days ill. He says he had only slight shivering at the beginning of illness, with no headache or vomiting. He has been previously *in* with scarlet, and was dismissed on 3rd April, 1880, without anything troubling him in the intervening time."

"There is a faint rash to-day (16th January), although after admission yesterday, it was much brighter. Pulse, 72 per minute. No cough, nor any other troublesome symptom."

17th January (sixth day of illness).—"Desquamation commenced."

26th February.—"Dismissed well."

On the last occasion he was admitted under my charge on 30th October, 1881. Illness began on 25th October, with chilliness and sore throat. Patient, thinking it was only an attack of cold, which would soon pass off, took some medicine, and persevered at his work till 28th October. On that day, he was sick, and vomited several times. A troublesome cough had now developed; and the soreness of the throat had become much worse, so that he experienced considerable

difficulty and pain in swallowing. In the evening, he observed a faint rash on the chest. Thirst was very slight, and there was no great febrile disturbance.

On 30th October he was seen by Dr. John Wilson, London Road, who told patient he was again suffering from scarlet fever. Patient was removed to the hospital the same evening.

Condition on Admission.—A bright uniformly distributed scarlet rash is seen on trunk and extremities. Tongue moist, congested at edges, and coated with whitish fur. Pulse 90. Temperature not taken. Glands below and behind angles of jaw tender and swollen, particularly on left side. Fauces look red and irritable; tonsils slightly enlarged. Expresses himself as having less pain on swallowing to-day. Pulmonary and cardiac conditions satisfactory. Treated by a mixture containing iron and chlorate of potash. Milk and beef-tea.

31st October.—Rash fading. Desquamation has already commenced on neck. Tongue cleaning. Pulse 80. Temperature normal.

3rd November.—Desquamation progressing rapidly on neck, chest, and markedly so on anterior aspect of thighs. Appearances of palate and fauces normal. Cervical glands much less swollen. Now he swallows without pain. No albumen in urine.

11th November.—Desquamation nearly complete; epidermis of each foot separated in one large flake like a slipper. Tongue clean. Pulse quiet. No albuminuria.

17th November.—Patient had a bath last night; skin to-day is free of any desquamating cuticle.

Patient convalesced rapidly, without a single bad symptom; and was dismissed well, on 7th December.

Remarks.—From these notes it will be evident to every one that the disease could be no other than scarlet fever. Were further evidence necessary, the patient's own statement, corroborated by that of intelligent nurses in attendance, might be cited. In substance it amounts to this—that *the three attacks were in every respect similar* each time; desquamation began very early—about sixth day of disease—and was copious and complete.

I quote the statement of Dr. Wilson—the gentleman who saw and certified the case before its admission into the Hospital:—"On each of the three occasions I visited him (patient) in his home, . . . and on each occasion the rash was well developed. On each occasion he suffered from

inflamed sore throat and, immediately on his disease being diagnosed, was hurried off to the Hospital, and the house disinfected, so as to prevent the children taking it."

It is somewhat remarkable that neither the patient's wife nor any of his three children have at any of the above times contracted the disease.

Patient lives in comfortable circumstances—always able to procure good wholesome food. His surroundings are healthy. He is not aware of ever being exposed to the infection of the disease.

Dr Russell informs me that scarlet fever was, on each occasion, more or less prevalent in the city and in the district in which he (patient) lived, but not in his immediate neighbourhood.

Patient had no attack of the disease in childhood.

CURRENT TOPICS.

WE learn that Dr. Cassells' translation of Professor Politzer's *Text-Book of Otology* is nearly ready, and will be issued shortly. The volume will consist of 750 pages demy 8vo, with 250 illustrations. It will be published by Messrs. Baillière, Tindall, & Cox, London.

A BUST of Dr. Protheroe Smith, the founder of the Hospital for Women, Soho Square, the first of its speciality, was recently presented to the Institution by friends and patients, and was unveiled on the 14th Dec., by Sir Rutherford Alcock, K.C.B., the Chairman of the Committee of Management, on being placed in position in the hall of the Hospital. The work has been well executed by Mr. Belt.

REVIEWS.

The Baths and Mineral Waters of Bath. By RANDLE WILBRAHAM FALCONER, M.D. Sixth Edition. London: Churchill. 1880.

The Harrogate Waters: Data Chemical and Therapeutical, with Notes on the Climate of Harrogate. By GEORGE OLIVER, M.D. London: H. K. Lewis. 1881.

Royat in Auvergne: its Mineral Waters and Climate. By G. H. BRANDT, M.D. London: H. K. Lewis. 1880.

The Mineral Thermal Springs at Chatel-Guyon, Auvergne. By G. H. BRANDT, M.D. London: H. K. Lewis. 1881.

Two of the above works merit little notice—viz., those of Dr. Brandt; for they treat of their subject in such a general way as to give only very imperfect data to the physician in search of a health-resort for his patients. The springs, both at Royat and at Chatel-Guyon, are thermal, the highest temperature in either case being about 95° F. The chief constituents of the former are alkaline carbonates, chloride of sodium, and free carbonic acid; of the latter, free carbonic acid, chlorides of magnesium and sodium, and bicarbonates of lime and soda. Chatel-Guyon is recommended for cases of chronic congestion of the abdominal organs, and Royat for chronic gout and chronic affections of the cutaneous and respiratory systems. Dr. Burney Yeo adds a preface to the work on Royat, testifying to the usefulness of its springs in such cases; and one cannot but think that he would have been better employed in translating his friend's *brochures* into presentable English.

The other two works are of a different kind, and will prove of great service to those interested in these mineral waters. Dr. Falconer prefaces his book with a brief but interesting history of the mineral waters and baths of Bath, the reputation of which is of great antiquity, dating at least from the Roman occupation of this country. Numerous remains have been found of the establishments erected by the Romans over the springs, the magnitude of which plainly indicates the high value attached by the Romans to them, both as therapeutic agents and as luxuries. From the descriptions of the various baths given in the first two chapters, and from the plans appended, it is evident that they are very complete. As is well known, the springs of Bath belong to the thermal class, their temperatures ranging from 104° F. to 120° F. Their

most abundant constituents are sulphate of lime, chlorides of sodium and magnesium, and sulphate of soda, but they also contain a small quantity of iron, the effects of which are said to be more decided than could have been expected from its amount. The gases evolved by them are carbonic acid, nitrogen, and oxygen, the nitrogen amounting to 97 % of the whole gases. Dr. Falconer believes that this nitrogen has a beneficial effect, though he cannot explain its action. In this connection, he makes the following sensible remarks:—"It is not, however, to the presence of one or more particular mineral ingredients of a spring, except where they are found in large proportions, that its efficacy is to be attributed, or on which its selection as a medicinal agent will depend. It is to the union of the several substances contained in the water, the quantity of fluid with which they are combined, and still more to the recorded experience and concurrent testimony of credible witnesses, that we must chiefly refer for instruction and guidance in the choice and employment of a mineral spring" (p. 37.) In the succeeding pages, information is given as to the symptoms produced by drinking the waters, or by using them in the bath, from which indications are obtained for continuance or discontinuance of their use. The diseases which are chiefly benefited by a course of the baths (generally taken in spring or autumn), are disorders of the digestive organs, atonic or latent gout, subacute and chronic rheumatism, stiffness of the limbs from various causes, skin diseases, and diseases of women. The last chapter gives an account of the Bath General, or Hot Mineral Water Hospital, opened in 1742, and now containing 142 beds. It is the only institution of the kind in the kingdom, and is a national charity, free to all who are unable to afford the expense of a course of the baths (which, by the way, is not mentioned), and whose cases are likely to derive benefit therefrom. Information as to how to get admission is given in this chapter. Dr. Falconer's belief in the efficacy of the waters of Bath is great, but his statements are all characterised by moderation.

While Dr. Falconer's work appeals to the general public as well as to the medical profession, Dr. Oliver's is addressed to the latter only. It is divided into three sections—on the climate of Harrogate as a health-resort; on the chemistry and physiology of its mineral waters; and on the therapeutic power and range of these waters. The details which refer to the administration and the various applications of the waters have been purposely omitted, as the author is of opinion that treatment at Harrogate must be under the personal supervision

of some of the local practitioners, and cannot be directed by any physician at a distance. While this is no doubt true, we cannot but think that Dr. Oliver has made a mistake in altogether abstaining from giving such details, as medical men sending cases there have a right to know on what lines the treatment is likely to proceed. The various sections of the work are treated very fully. From its geographical position, and from meteorological and geological data, it is shown that Harrogate is unrivalled among the health-resorts of this country (and, to some extent, also of the Continent), in the freshness, dryness, and invigorating properties of its climate. To this it is added that its water supply and drainage leave nothing to be desired. Hence, as a mere health-resort, Dr. Oliver recommends it strongly in cases of scrofula, nervous prostration, and chronic non-advancing phthisis, &c. The Harrogate waters draw annually about 60,000 visitors, whose wants are supplied by eighty medicinal springs, no two of which have exactly the same composition. Though its reputation was originally derived from its sulphur springs, Harrogate possesses other mineral waters of equal importance—viz., the iron waters. All the springs are non-thermal. The sulphur waters are divided by Dr. Oliver into two classes—the pure sulphur and the saline sulphur. They are particularly rich in sulphide salts, and therefore do not lose in efficacy by exposure to the air, while they are said to be more active when administered internally than those containing much free sulphuretted hydrogen. The iron waters are classed as saline chalybeates, sulphated chalybeates, and pure chalybeates. Among the former is one to which great importance is attached, the chloride of iron spring, the only ferruginous water known in which iron is linked purely with chlorides, earthy sulphates and carbonates being absent. The physiological and therapeutic effects of the various substances found in the Harrogate springs are treated of in great detail. We cannot follow out these details, but we may note that Dr. Oliver has great faith in the chlorides, and especially the chloride of calcium, in scrofula; and that in diseases of the circulation, nervous and cutaneous systems, &c., he regards with much favour the barium salts, to the consideration of which fourteen pages are devoted. Of diseases to be benefited by a course of the waters, the author has a long list, among which we note gout, rheumatism, skin diseases, anæmia, debility, and affections of the uterus. Dr. Oliver is a firm believer in “liver” as a disease of Protean character, and he looks upon the sulphur waters as of great value in its treatment.

In speaking generally of the therapeutics of the various springs, the author states that their common action is "acceleration of tissue-change. The number and variety of the waters enable the prescriber to vary the combinations according to clinical requirements; he may, for example, maintain an equally balanced increase of building and of unbuilding, or he may cause one of these processes to predominate, or he may render the therapeutic movement of tissue-metamorphosis irregular—now in the ascendant, a quickening of the production and removal of waste, and now of construction" (p. 162). This smacks too much of the laboratory, and too little of the bedside aspect of medicine; it illustrates what we regard as the chief fault of this book—a tendency to too much theory and hypothesis.

The perusal of these books leaves one in the full belief that England stands unrivalled in the matter of mineral watering-places, and that the annual exodus to the Continental springs is purely the outcome of a desire for novelty. We hope that these publications may be instrumental in diverting the current, which is evidently their intention; but we fear that climatic influences are against them.

The Prevention of Stricture and of Prostatic Obstruction.

By REGINALD HARRISON, F.R.C.S. London: J. & A. Churchill. 1881. Pp. 28.

WITHOUT going so far as Mr. Harrison in condemning the theory and practice of Dr. Otis as regards the priority of gleet and stricture, we think there can be no more doubt that the persistence of a gleet is, in a large number of instances, the forerunner of an urethral stricture, than that its persistence is due to inefficient treatment; and the *urethral irrigator*, which is here recommended by Mr. Harrison, is a most valuable addition to our means of treating discharges from the deeper parts of the urethra.

We cordially agree with the author that injections with the ordinary glass syringe can do nothing for discharges arising from the bulbous urethra, inasmuch as they cannot reach the part affected; and if injections are to be used at all, there must be some more efficient apparatus for their application. Nothing can be simpler than the *urethral irrigator*, or less likely to do harm in the hands of the patient, by whom the treatment therewith is to be carried out; and Mr. Harrison has had abundant experience proving its efficiency. We are inclined

to believe, however, that the occasional passage of a metal bougie, as large as the urethra will admit, without any other treatment, will cure the greater number of cases of persistent gleet, and this with less trouble or annoyance to the patient than the use of the irrigator. In certain cases, more especially those of chronic gonorrhœa, much benefit will be derived from the use of the *irrigator*.

The method proposed in the second article for the prevention of prostatic obstruction, is the frequent passage of bougies. The author urges that "the employment of persistent catheterism on the first indication of the prostate enlarging, though not preventing the growth taking place, will yet have the effect of so moulding it as it grows as to prevent interference with the mechanism of micturition."

Whether this most desirable consummation can be attained with any degree of certainty has yet to be seen, for we think Mr. Harrison gives too few data on which to found an accurate opinion; but, at the same time, the consummation is so desirable, that the method is well worthy of a trial by all who have an opportunity of treating these serious and hitherto unsatisfactory cases.

A Treatise on Aural Surgery. By PROF. H. MACNAUGHTON JONES. Second Edition, revised and enlarged. Pp. 344. 60 Illustrations. London: J. & A. Churchill. 1881.

THE first edition of this very practical book, consisting of about 130 pages, was reviewed in these pages about two years ago. On that occasion we were compelled to speak of the work in a very favourable way, saying, at the same time, that a second edition would soon be called for—it has been called for soon.

This book, however, has been considerably enlarged (to 344 pages), re-arranged and re-written. It is now brought up to the present standard of aural therapeutics, while it has maintained its practical character. Its author deserves the thanks of general practitioners all over the kingdom, as it is a treatise thoroughly suited to their requirements.

To give an idea of the value of the work before us, we need only say that the directions how to examine a patient who has a diseased ear occupy chapters i-vii out of the twenty of which the book is composed. Chapters viii and ix are taken up with a description of instruments employed in diagnosis and treatment. In chapters x, xi, xii, the author discourses very fully on the diseases of the external ear. In chapters xiii, xiv,

adenoid growths of the naso-pharynx and post-nasal catarrh, moist and dry, are fully and clearly described. Chapters xv-xviii contain a very complete and practical account of the diagnosis and treatment of the diseases of the middle and internal ear, and their treatment, not only after the author's own experience, but after that of the most famous aurists. Chapter xix treats of deaf mutism and the management of deaf-mutes. In this chapter Cassells' *Hartmann on Deaf-Mutism and Lip Reading*, as also the methods of Turnbull and Bell in the education of deaf-mutes, are very fully quoted and commented on by the author in a very able manner. Chapter xx treats of micro-organisms in the etiology of furunculus.

To show the practical character of the work, we quote what the author says at page 141:—

"*Foreign Bodies in the Meatus.*—From time to time it has occurred to me to see considerable damage done by rash and persistent efforts to extract foreign bodies from the auditory canal. The late Mr. Hinton has used the expression—'aural surgery is simply surgical *common sense*, and needs comparatively little insistence on special points beyond that which a trained surgical *instinct* would suggest.' 'Common sense' and 'surgical instinct' appear alike to be blunted when, with a remarkable absence of both, persons are yet to be found who can be rash enough to employ clumsy force and ill-contrived instruments in the removal of what often is, even after a prolonged residence, a comparatively harmless tenant from the external meatus. I would say a few words for common sense and surgical instinct such as anatomical knowledge might suggest to any one who pauses to reflect on the form and design of the external passage of the human ear.

"In the *child*, the meatus is remarkably narrow; it is mainly cartilaginous; it is often congenitally contracted; its skin-lining is directly continuous with the membrana tympani, and is intimately connected with the periosteum of the temporal bone; it is close to the dura mater, and closer still when gaps occur in the osseous canal. In the *adult*, the canal is more spiral, the osseous portion is proportionately larger; but the entire passage may be described as a coiled tube, about one inch in length, consisting of two portions, situated almost at an obtuse angle to each other, the junction of the two being marked by a peculiar contraction, any further closure of which, in consequence of inflammation or thickening, completely shuts off the bony internal pouch from the external funnel.

"Two things are at once evident from these simple considerations of the anatomy of the passage; first, that the direction of any extracting or expelling force must depend on the portion of the canal in which it is applied; secondly, that, having in view secondary consequences, and also the effect that inflammation has in frustrating our effort to remove a foreign body from the passage, we should employ no force that is in the least calculated to excite this inflammation. The greater the swelling of the epidermis with subcutaneous cellular effusion, and it may be periostitis, the greater the jamming the foreign body, whatever it is, gets. If it be hard and angular, this is more likely to occur than if it be smooth and round. If it be pushed into the pouch in front of the membrane, and the latter be contused in attempts to catch it, the more likely are we to have inflammation of the membrane and resulting perforation, with tympanic mischief. If the canal becomes so swollen that the foreign body cannot be seen, and its removal be still attempted, then the effects of this 'groping in the dark' are more disastrous; further inflammatory mischief and tighter jamming.

"Now, what is it that, in the large proportion of cases, fixes foreign bodies in the ear?—Attempts at removal. . . .

"Having thus given the brief details of a few obstinate and difficult cases, I desire to quote these remarks of Hinton and Tröltsch on this subject. The former says:—'I must be pardoned for speaking earnestly on this point. Even to this day it remains the fact that ears are thus destroyed without shadow of reason or excuse, and not by careless or incompetent persons alone. I believe it may be laid down as a rule that, whenever an instrument will succeed, syringing would also succeed; and that, when proper syringing will not succeed, all instruments are full of danger; if had recourse to before violence has been used, syringing would probably, in all cases, remove the offending body in ample time to prevent mischief.' 'Injuries,' says Tröltsch, 'are frequently inflicted on the soft parts of the meatus by patients with itching in the ear, by means of knitting-needles or sharp metal ear-picks; graver and more serious frequently prove those contused and lacerated wounds of the meatus inflicted by a professional hand, in attempting the removal of foreign bodies, even in those cases in which most harmless intruders, as morsels of bread and paper, are concerned. . . . On such occasions, the instrumental foreign bodies are generally the chief part of the evil.'

"There can be no doubt that foreign bodies may remain a long time in the meatus and produce no bad results. We

should remember this fact, in cases where patience is indicated, and where there is no need for active and it may be dangerous interference.

"Finally, on this much debated question of the extraction of foreign bodies from the ear, I venture to give it as my opinion that *all* instruments are in a degree dangerous, to be employed with caution, and on no account should their use be continued until proper syringing has first been given a long trial. To syringe the ear, the lobe should be held well back, the head sideways, the face slightly up, and the stream directed with sufficient force so as to pass between the foreign body and the wall of the meatus. I fill the ear with glycerine after each syringing, and repeat the process daily. I have known a piece of cobbler's wax used with success to draw a foreign body out. Glue applied with a camel's hair pencil (Löwenberg), and allowed to harden on the body, has been employed. Dentist's cement may be applied with the same object. Quietness and firmness with friends, patience in using the syringe, extreme caution with all forms of mechanical helps are the essentials for dealing successfully with foreign bodies in the ear."

In conclusion, we honestly recommend this book to those for whom it is specially written—general practitioners.

Deformities of the Mouth, Congenital and Acquired, with their Mechanical Treatment. By OAKLEY COLES. London: J. & A. Churchill, New Burlington Street. 1881.

THIRTEEN years have elapsed since the first edition of the above work was published, and now we have the third edition, with some new chapters added, and a greater part of the original re-written. While, however, the title of the book would lead us to expect it to be a complete monograph on the subject of which it treats, its scope is in reality more limited, and it is mainly confined to a consideration of congenital cleft palate. Of recent years the labours of Roux, Fergusson, T. Smith, Warren, Pollock, and others have brought fissures of the palate within the domain of successful surgery, and accordingly the treatment of these malformations has become of more general interest. With a view of showing "the recent advances that have been made in the *mechanical* treatment of this deformity," Mr. Coles was originally led to publish this volume; and while, as we said above, the present edition differs somewhat from its predecessors, the author

seems to have kept his original object fully in view. In other words, while valuing the labours of the operative surgeon in cases suitable for operation, he desires to bring under the notice of the profession the valuable assistance that in many cases can be derived from mechanical appliances, the early use of which often contributes to the success of subsequent operations, especially in preventing that defective articulation which is so easily acquired and so difficult to eradicate afterwards. Accordingly, this work is addressed not only to fellow-workers in the same field of labour, but also to the medical profession generally; and in the very appropriate dedication of the present edition to the memory of Sir W. Fergusson, we would fain see a tacit approval of the modern enlightened tendency to establish dentistry proper on the broad and proper basis of surgery.

The first of the fifteen chapters of which the book is composed is taken up with a brief account of the anatomy of the normal palate. Incorporated with it we find a table of the dimensions of the palate. These are given in millimeters, and include its average length, width, and height, as deduced from the careful measurements of a considerable number of the skulls of both European and mixed races. The chapter very appropriately closes with some reference to the bones which play so important a part in the case of malformed palate—viz., the intermaxillary. While the discovery of their existence is usually ascribed to the poet Goethe, Mr. Coles has brought forward very satisfactory evidence to show that this honour must be assigned to Dr. Robert Nessbitt, who, in the year 1736, while lecturing before the Royal College of Surgeons, drew attention to them and fully described them. The author adopts the view expressed by Mr. Callender in his researches on the development of the bones of the face—that the intermaxillary bones do not completely form the sockets for the incisor teeth. This may be true in some cases, but we think is not universal, as instances not uncommonly occur where the sockets have been found entire. We find no reference made to that delicate lamina or plate of bone which by many anatomists is held to extend in man from the maxilla over these central bones, and which, in conjunction with the ankylosis existing at birth, helps to mask and obscure their independent nature. It is interesting to observe that in some animals, such as the three-toed sloth, and in serpents, we have the intermaxillary bones united, it is true, in the centre, but altogether separated on each side from the maxilla, thus showing normally those abnormal

arrests of development in man, which we term "hare lip." Coming to the question of the etiology of cleft palate, we find that Mr. Coles has nothing new to advance. Of course, along with all other writers on the subject, he holds that hereditary influence probably plays the most important part in these congenital deformities, and he believes that there are grounds for holding "that the relation between a high state of civilisation and a high proportion of palatal deformity is something more than a mere matter of coincidence." This, however, is more or less a speculation, and the author thinks that, in reference to the real exciting causes of cleft palate, we are scarcely any nearer the truth now than we were many years ago. In connection with this point some very interesting points are brought out in chapter vi, where the correlation between the palate and the cranium is discussed, and among various facts elicited we find it pretty well established that there seems a definite relation between palate and cranium; certainly as to length and breadth, probably as to outlines, and that in palatal deformity or interference with the mechanism of speech, there seems to be in a large number of cases asymmetry of the brain-case. All this bears on the views held within recent years by Dr. Langdon Down, who has convinced himself that there is a constant relation between malformation of the palate and defective cerebral development.

Of the other chapters in the volume, we have one on the classification of deformities of the upper jaw, and in this the author brings forward an entirely new and original nomenclature. He regards the triangle as the best geometrical figure whereby to measure the different shapes of the maxilla, and abandoning all the old standard terms he introduces new ones. He considers there are seven well marked divisions to one of which all cases can be referred, and he names them the dolichoid, brachoid, macroid, microid, intermaxillary prognathous, intermaxillary hypognathous, and lambdoid, this last constituting the true V-shaped arch of congenital idiocy. In another chapter we have a very concise account given of the appliances used for remedying cleft palate (whether congenital or accidental) from A.D. 1552 to the present time; and then we have very full directions as to the best plan of taking an impression for an artificial palate. Defects of the palate arising from syphilis, and the treatment of gun-shot wounds of the face and maxilla, are among the other subjects brought under notice.

In conclusion, we would say that the tone of the whole book is one of great fairness and originality, and the principles

it enunciates are the result of long personal experience. Its value is also enhanced by the large number of woodcuts and drawings on stone which it contains, and we feel sure that it will be extensively and profitably resorted to, not only by dentists but also by surgeons; and the deserved favour it has heretofore met with from all ranks of the profession will be maintained by the present edition.

Refraction of the Eye: its Diagnosis, and the Correction of its Errors, with a chapter on Keratoscopy. By A. STANFORD MORTON, M.B., F.R.C.S. Ed. London: H. K. Lewis.

MR. MORTON'S little book is "intended for beginners, and for those, such as physicians or general practitioners, who, systematically using the ophthalmoscope in their investigation of disease, wish to avail themselves of the information thereby afforded regarding the patients' refraction, the errors of which they must be able to detect, in order to make due allowance for them." The author recommends that the systematic examination of the refraction should be conducted in the following manner:—

"1. Listen carefully to the nature of the complaint.

"2. Test and note the near and distant vision without glasses.

"Examine the refraction with the ophthalmoscope, and then, having by these means arrived at a conclusion, proceed to confirm the opinion by means of test-glasses."

After some preliminary observations on "the numbering of lenses," the action of rays and lenses, definitions of the different kinds of vision, and descriptions of the various kinds of tests, and the method of employing them, the remaining chapters are devoted to the systematic examination of the refraction in the order already indicated.

The existence of an anomaly of refraction having been demonstrated by simple tests, the indications afforded by the ophthalmoscope are of great value, in so far as they furnish us with an objective, and therefore independent, means of arriving at a correct estimate of the nature and amount of the refraction anomaly.

Under the heads "Indications afforded by means of the Mirror alone, Direct Method, Keratoscopy (Retinoscopy); "Indications afforded by Mirror and Object Lens (Indirect Method); "Estimation of the Refraction by means of lenses

in the Ophthalmoscope;" the optical conditions and the phenomena exhibited are explained and illustrated in a simple and perfectly satisfactory manner. Having ascertained the nature of the refraction anomaly by one or more of those methods (a combination of the first and last will probably be found the most convenient and generally useful in practice), the subsequent testing and correcting of the optical defect with glasses becomes comparatively simple, and is easily effected.

In the concluding part, on "Test-glasses and Types," the methods of testing and the necessary precautions to be taken in estimating the refraction are given in detail, and the allowances to be made in prescribing suitable glasses precisely stated.

In this, as in the other parts, the author, by adopting the experimental method, has succeeded in bringing this rather difficult subject within the range of a greater number of students and practitioners. We can most cordially recommend the book as a trustworthy guide to the study of the refraction of the eye, and admirably adapted to fulfil the object intended by the author.

REPORTS OF HOSPITAL AND PRIVATE PRACTICE.

GLASGOW ROYAL INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. WM. MUIR.

FROM DR. MORTON'S WARDS.

CASE I.—COMPOUND DEPRESSED FRACTURE OF SKULL, CAUSED BY A FALL FROM A ROOF TWENTY-FIVE FEET HIGH.—[Reported by Dr. Hunter, House Surgeon.] J. W., æt. 26, a bricklayer, was admitted to the Royal Infirmary on 17th October, 1881, with a depressed fracture of the skull over the upper margin of the occipital bone, and a little to its right side. There was a wound of the scalp, with blood flowing profusely from it, sufficient in size to allow the little finger to feel the depressed portion of bone. The man met with the accident by falling from the roof of a factory to the depth of twenty-five feet, on his head.

When admitted he was suffering from all the symptoms of compression. The pupils were equally dilated and quite insensible, and the bladder was much distended. The catheter was introduced, and two pints of urine drawn off.

Dr. Morton, after slightly enlarging the wound, removed with the elevator and dressing forceps a portion of bone measuring half-an-inch square. The patient was then put on tartar emetic and calomel; and wet cloths were applied to the head.

From this date up till the 26th, the man lay in a semi-comatose condition, with a considerable quantity of serous fluid coming from the wound, passing his fæces and urine involuntarily, and his temperature varying from 100° to 104°.

On the 26th the pupils were normal in size. On the evening of the same day he became very noisy and delirious, his face flushed, and his pulse quickened; his temperature rose slightly, and pus came from the wound.

20th October.—Patient much quieter; temperature down to 99°; a larger quantity of pus discharging.

1st November.—Delirium gone. Up till this date patient has been on milk diet; but to-day began to take a little solid food, the discharge becoming a little thicker.

26th November.—Since last date the quantity of pus coming away has been slighter. On examination, a piece of bone was found to be loose and was removed.

30th November.—Discharge less. The wound is closing up, looking healthy, and showing no signs of hernia cerebri taking place. A final closure of the wide gap in the cranium is now probable by the gradual formation of ligamentous tissue.

9th December.—Patient is improving in every way, and is now allowed to sit up for a short time during the day. There is not the slightest defect in his sight or hearing, no paralysis of any form, no impairment of mind, and his tactile sensibility is quite acute.

WESTERN INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. W. G. DUN.

FROM PROFESSOR G. BUCHANAN'S WARDS.

LARGE SARCOMATOUS TUMOUR OF NECK—OPERATION—RECOVERY.—[Reported by Mr. Anstruther Davidson, M.B.] P. K., aged 50, storekeeper, admitted 2nd November, 1881,

suffering from a large tumour on left side of neck. About 30 years ago he first observed a small lump near the angle of the jaw, which has since that time been slowly increasing in size without any pain or discomfort other than those connected with its site, until two weeks ago when, due he thinks to having caught cold, it has, while increasing rapidly, been the seat of occasional rather severe pains. It is a large, smooth, semi-elastic tumour, extending from the angle of jaw to the clavicle, below and behind which it apparently passes, there being dulness on percussion over two inches at the upper part of left lung. In front it is limited by the larynx, which has been pushed $\frac{3}{4}$ in. from the middle line, and behind it extends to the border of the trapezius. The skin is freely movable over the tumour, which seems to be free from any firm attachment to the deep structures and to the larynx. The sterno-mastoid, with the carotid artery, runs over the tumour, that vessel being felt beating along its whole course in the neck. The left pupil is slightly contracted and sluggish in action, but sight is unimpaired. There is slight dyspnoea, and for the last two weeks slight dry cough. No difficulty in swallowing.

12th November.—Professor Buchanan cut down near the most prominent part of the tumour, leaving the carotid artery on the inner side. The superficial part of the tumour, about the size of a man's two fists, and more or less lobulated, was then enucleated, and the deep part of the tumour was seen to extend backwards to the vertebræ, and down behind the clavicle in front. The upper part was then dissected off the transverse processes of the vertebræ, one of which was somewhat eroded, and the descending portion was in part removed by tearing, during which process patient began to cough incessantly, which caused the portion behind the clavicle to rise up with each expansion of the lung. There was very little hæmorrhage, only 5 or 6 ligatures in all being applied. No veins were cut that required tying. The wound was closed with wire sutures and shields, a drainage tube inserted at the lower border, and lint dipped in carbolic oil applied.

Evening.—Temperature 100° F.; pulse 92. Feels throat painful; cough somewhat troublesome.

13th November.—Last night, at 12 P.M., somewhat suddenly, his breathing became laboured, and he felt a choking sensation in his throat, which necessitated his being raised to the sitting posture, after which, though the choking sensation was relieved, his breathing continued laboured as before.

Through the night he felt drowsy, and was at times slightly

delirious; but this morning he is quite sensible and breathing more easily, but his throat is so very painful that he can only swallow liquids in tea spoonfuls, and that with great difficulty. Iced soda water, milk, beef-tea, and brandy given frequently. There has been considerable oozing of blood through the night.

14th November.—Breathing very much easier. Wound, save where tube is inserted, has united by first intention. Temperature—morning, 98°; evening, 101°.

16th November.—Shields and upper stitches removed. Drainage tube shortened. Little discharge. Breathing normal. Swallows food with much more ease. Temperature—morning, 98°; evening, 100°.

18th November.—Drainage tube and remaining stitches removed. Temperature normal.

5th December.—Wound healed. The site of the tumour remains hard. There is still some fulness on left side. Pupil remains contracted as before. He has still a "soreness" when he swallows solid food. He has a slight dry cough, and voice is slightly husky.

The tumour was examined by Dr. Coats, who reports—

"The main tumour is of an irregular rounded or oval shape, considerably larger than both closed fists. In its longest diameter it measures 5½ inches. For the most part it has a smooth external capsule, but at one extremity there is considerable elongation and irregularity, as if the tumour had been attached more deeply. On section the tumour has a yellowish-grey colour. At one point near the elongation mentioned above there is what appears to be a cyst, which has its seat immediately beneath the capsule. On microscopic examination, the tumour is found to be essentially spindle celled, but in some parts a concentric arrangement is observed, suggestive of a possible adenoid origin."

TWO CASES OF RADICAL CURE OF HERNIA—CASE I.—J. S., æt. 13, plumber, admitted 3rd November, 1881, suffering from right oblique inguinal hernia, the history of which dates from six years ago, when after a fall from a fence he observed a slight swelling, which used to come and go, and gave him very little trouble till two years ago, when it descended into the scrotum, since which time a truss has failed to keep it from descending. The hernia is easily produced by coughing, and on reduction there remains a thickening which is felt to extend up through the ring. This thickening, when examined by transmitted light, is not transparent, and is considered to be omental.

26th November.—Professor Buchanan performed to-day a radical operation for the cure of the hernia. On opening the sac a long piece of omentum was found lying in the canal, and adhering to it was the protruding bowel, which having been returned, the omentum was ligatured at the external opening, and a large fan-shaped piece cut away. This, when spread out, measured 14 inches across at the free edge. The canal was then closed in the way recommended in Professor Buchanan's paper on the subject, waxed silk ligatures being used. The skin was then brought together by three wire sutures, a drainage tube inserted, and antiseptic dressings applied; $\frac{1}{2}$ grain morphia was administered subcutaneously after operation. Temperature at night, 100° .

27th November.—No pain; feels quite well. Temperature—morning, 99° ; evening, 99.2° .

1st December.—Wound dressed. A small elastic swelling, resembling a hernia, had appeared above the testicle, from which, on being pressed, $\frac{1}{2}$ oz. straw-coloured fluid exuded through the wound. Scrotum suspended. Temperature normal.

4th December.—Wound nearly healed; slight purulent discharge; drainage tube and suture removed. Antiseptic dressings discarded. Ointment of boracic acid and vaseline applied. Testicle on left side twice natural size.

19th December.—Swelling of testicle gone. Wound healed. No sign of hernia reappearing. Ligatures encapsuled.

CASE II.—G. M'Q., æt. 8, admitted 11th November, 1881, with right oblique inguinal hernia, which had been known to exist since he was three months old. Parents could not say whether it was present before this or not. The canal is wide, and the hernia can be reduced with ease, but as easily comes down again, and no apparatus or bandage can retain it in its place.

19th November.—Professor Buchanan operated to-day, opening the sac, reducing the hernia, and by curved needle and waxed silk ligatures bringing the pillars of the external ring together. Ligatures were cut short and left to be encapsuled. Drainage tube was inserted, and external wound closed with sutures. Antiseptic dressings were applied, and child afterwards put on a splint in the shape of a St. Andrew's Cross so as to prevent movements.

21st November.—Dressed with oiled lint. Wound nearly healed. Splint removed.

23rd November.—Has been restless all day, and not inclined

for food. Has no pain in abdomen or elsewhere.. No discharge from wound, or any sign of irritation. Temperature—morning, 99°; evening, 101·6°.

24th November.—A rash exactly like that of scarlet fever is seen diffused over thighs, abdomen, and chest. He is hot and feverish. No sore throat. Bowels regular. No signs of peritonitis. Temperature—morning, 101·8°; evening, 103°. This rash persisted from 24th to 29th November, and the temperatures varied from 103·2° to 100·4°. On the 29th, there were observed signs of irritation, redness, and swelling at the wound, and on the 30th a soft boggy swelling had appeared at the upper part. Professor Buchanan then passed a director up through the wound and liberated an ounce of pus, afterwards inserting a drainage tube. Poultices were then applied. Rash quickly disappeared. Temperature fell rapidly, and appetite returned; so that now—

19th December.—The discharge has almost quite ceased, and in the situation of the ring, round the encapsuled ligatures, the tissues are firm and dense, and canal quite occluded.

In both the cases the result has been most satisfactory.

THE GLASGOW HOSPITAL AND DISPENSARY FOR DISEASES OF THE EAR.

UNDER THE CARE OF DR. CASSELLS.

Reported by MR. ROBERT STEEL, Clinical Assistant.

TWO CASES OF CHRONIC MUCO-TYMPANITIS FROM HEREDITARY SYPHILIS.—CASE I.—S., æt. 23, admitted 14th January, 1881, complaining of marked deafness in left ear of about three years' duration; it came on slowly, and got gradually worse till now. She can hear faintly the tick of a watch placed over the auricle, but cannot hear it at all when the watch is placed upon either temple. She hears the watch tick much more plainly when it is placed over the right auricle, but the hearing here is also defective, the defect dating back only some six weeks. She complains of a constant noise in her head, referring it to behind the ears, and compares it to that produced by the blowing-off of steam: it varies much in intensity, and is a constant source of annoyance. When about 7 years of age she says she had inflammation of the eyes, and since that

her sight has been bad. At present she says she can see to read with the right eye, if she closes the left and holds the book close to the eye. The disease here is a "neurosis of the optic," and possibly white atrophy.

Present State.—Patient very anæmic. The drum-heads are abnormally concave and very irregular, due to calcareous infiltration. The remainder of the membrane is being converted into white fibrous tissue.

Diagnosis.—Chronic muco-tympanitis, syphilitic, hereditary.

Treatment.—Poltizerise; pil. aloes et myrrh., xii grains at night; ferri carb. sach, xx grains before breakfast and dinner; port-wine, ziv daily. Dismissed 24th January, much improved in hearing.

CASE II.—T. M., æt. 23, admitted 18th February, complaining of having heard badly ever since having her ears syringed six years ago. On examination she is found to be totally deaf. Watch not heard on any part of head, neither is tuning fork in vibration perceived when placed in close contact with patient's head. The drum-heads are opaque and lustreless, very concave, and catarrhally thickened throughout. There is no calcareous deposit in the membranes. She has had syphilitic iritis, as evidenced by irregularity of the pupils.

Diagnosis.—Chronic muco-tympanitis, syphilitic, hereditary, with more recent superadded Eustachian catarrh.

Prognosis.—Incurable, but able to be improved so far as the treatment of the recent Eustachian catarrh is concerned.

Treatment.—Ammon. chlor., grains x every night at bedtime. Poltizerise daily, and employ Eustachian catheter twice weekly. Dismissed 4th April much improved, hearing a loud voice close to right ear.

DISCHARGE FROM EAR.—C. W., æt. 16, admitted 7th December, 1880, complaining of pain in the right ear, from which a discharge was coming. On the 3rd December patient got a cold, and on the evening of the same day the pain began. The pain continued up to admission. Patient is strong; bowels are constipated but feverish. On admission, bowels were well opened by a purgative of scammony. He was Poltizerised to clear tympanum of discharge, and the ear was treated with boracic acid. He recovered, and was dismissed cured 23rd December, 1880.

CHRONIC MUCO-TYMPANITIS.—R. J., æt. 48, admitted 28th November, 1880, complaining of pain and noise in his ears,

with which he had been troubled for about two years; the left ear was also running. It was diagnosed as chronic mucotympanitis, 2nd stage in right, and 3rd stage in left. There is perforation of the drum of the left ear. On admission, his bowels were cleared out by a purgative. He was treated with the Politzer bag and a nasal gargle. Dismissed 5th December, much improved, and to use the Politzer bag himself at home.

ACUTE MUCO-TYMPANITIS.—P. A., æt. 47, admitted 26th January, 1881, complaining of pain and noise in the right ear, which had troubled him for about a fortnight. The membrana tympani is seen to be bulged out, owing to the accumulation of pus in the tympanum. It was diagnosed as acute mucotympanitis.

Treatment.—The membrane was incised, and he was then Politzerised to evacuate the pus. Afterwards treated with the Politzer bag and chloride of ammonium. Dismissed 19th February, much improved.

CHRONIC EUSTACHIAN CATARRH.—D. J., æt. 24, admitted 21st February, 1881, complaining of deafness in both ears. The deafness had existed in the right ear for four months, and in the left for two months. He also complains of a whistling noise in both ears, and occasionally pain in the right.

Diagnosed as chronic Eustachian catarrh with secondary changes in tympana.

Treatment.—Politizerised daily, Eustachian catheter used twice weekly, chloride of ammonium internally, and the nasal gargle. The right membrana tympani being very relaxed was incised in three places in order to make it more tense when it cicatrised. *Result.*—Dismissed 30th April, hearing perfectly well in both ears, and only a slight singing noise in the right ear occasionally.

ACUTE MUCO-TYMPANITIS.—R. W., æt. 45, admitted 10th March, complaining of pain in the left ear, which had only troubled him since the previous day. On examination, the membrana tympani is found to be convex, owing to the accumulation of fluid in the tympanum.

Diagnosed as acute mucotympanitis.

Treatment.—The membrane was incised in order to let the pus escape, and he was treated with the Politzer bag, and with chloride of ammonium internally. The ear was dressed with boracic acid in very fine powder. *Result.*—Dismissed cured, 25th March, 1881.

CHRONIC MUCO-TYMPANITIS WITH POLYPI.—M. J., æt. 21. He was admitted 14th April, complaining of being deaf in both ears; the left ear also running. On examination, a polypus was found in the left ear, and also chronic muco-tympanitis of the same ear. There was an accumulation of cerumen in the right ear.

Treatment.—The polypus was removed on 16th April; another polypus was removed on the 19th April. The right ear was syringed, and the cerumen removed. He was treated with the Politzer bag, boracic acid in left meatus, and chloride of ammonium internally. He was dismissed on the 17th May; hearing perfect, and discharge stopped.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1881-82.

MEETING II.—4TH NOVEMBER, 1881.

PROFESSOR GEO. BUCHANAN, *President, in the Chair.*

THE PRESIDENT wished to be allowed to express his own and the members of the Society's deep regret at the untimely and unexpected death of Dr. Foulis, and to submit to the Society that the Council or Secretaries should be requested to draw up a short statement or minute expressing the grief of the members at the loss they had sustained, and their sympathy with his mother and other members of his family, and that the same be duly forwarded to Dr. Foulis' family.

DR. COATS read a paper on A CASE OF SPONTANEOUS LATERAL SCLEROSIS OF THE CORD, AND ONE OF POLIOMYELITIS ANTERIOR, which will be found at p. 31.

Dr. McCall Anderson had an analogous case of idiopathic lateral sclerosis of the lower part of the cord at present in his wards. There could be no question of hysteria in his case, as the patient was an adult male. All the symptoms present in Dr. Coats' case were illustrated in his—viz., paralysis, though not extreme; well marked rigidity; tremor on excitement or exertion; painful spasms; and exaggeration of the tendon

reflexes. Dr. Anderson showed tracings from the case, obtained by Dr. M'Vail's spiograph. Reflex excitability and electromuscular phenomena were normal. It was necessary to bear in mind the producing cause of such affections. During the last few years syphilis had been regarded as lying at the root of a large proportion of these cases. He referred to the statistics of Erb and Gower, who hold that, in more than one-half of the cases, the patients have had syphilis. In his own case, there was a history of the presence of a chancre 15 months ago, which was followed by the usual symptoms. Dr. M'Vail, who first had charge of the case in Dr. Anderson's absence, put him on a mild anti-syphilitic treatment, and, up to this time, with distinct improvement of the symptoms. It was difficult to say how much of the improvement was due to the mercurials and how much to the surroundings of the patient; but he was now determined to try still more active anti-syphilitic measures—viz., the rubbing into the skin of strong mercurial ointment. It was necessary, therefore, to bear in mind the possibility of a syphilitic basis, and also that, although anti-syphilitics may remove syphilitic lesions, they can have no influence on the secondary changes set up in the nervous tissue around; hence the importance of recognising the symptoms and their cause as early as possible.

Dr. M'Vail remarked that Dr. Coats had said that the ankle clonus was due to irritation in the neighbourhood of the cells of the spinal cord. It seemed to him (*Dr. M'Vail*), however, that the ankle clonus is simply a modification of ordinary physiological muscular action. If a weight be held in the hand it is not retained there by one nervous impulse, but by many, the muscles being in a condition of tetanus. Tetanus can be produced of any degree of rapidity. *Dr. Haughton*, by experiment on the contracting muscles of the thumb, had discovered that there was a uniform rapidity of nervous impulses to muscles—viz., 33 in the second. Though there is still doubt as to the exact number, it has been put down at about half that number. Taking the impulses at 20 in the second, in a minute this gives 1,200. Now, this number is sufficient to keep a muscle perfectly contracted; but, if they do not occur with sufficient rapidity, we will have a series of vibrations in proportion to the number of impulses. In *Dr. Coats'* case the number of vibrations was 400 per minute; in *Dr. Anderson's*, over 300; and in one of his own, about 200 per minute. The muscles at present under consideration are concerned in retaining the body in the erect position. When *Dr. Coats*, therefore, presses firmly on the sole of the foot, he

is practically putting it into the same condition as in a state of health; but, as the impulses here don't travel at the normal rate, they are not sufficient to retain the muscles in complete tonic contraction, and the tremblings occur. The ankle clonus, he thought, was not due to irritation at all.

Dr. Coats, in reply, said the remarks of *Dr. M'Vail* were very suggestive, but there was one objection to them, which was fatal. There is a normal clonus developed if we raise the heel, and lean on the toes.

Dr. M'Vail (interrupting) said this was the clonus of exhaustion.

Dr. Coats said this could not apply to the clonus developed when the hand was fully extended at the wrist. He did not think the lowering of the number of impulses had been proved, although *Dr. Anderson's* case apparently showed this, for he had found that *Dr. M'Vail's* instrument did not travel at a uniform rate. *Dr. Gowers* says that the clonus in health and disease is the same, which is contrary to *Dr. M'Vail's* theory.

DR. BROCK read NOTES OF A CASE OF HYPERALGESIA OF THE LOWER EXTREMITIES, FOLLOWED BY POINTING OF AN ABSCESS BELOW POUPART'S LIGAMENT. The illness set in suddenly, with vomiting, high fever, and delirium, which was followed in a day or so by hyperalgesia of the limbs, extending up to the lumbo-sacral articulation. The patient was placed in the prone position on a spinal bed, and treated by the internal administration of ergotin, and by dry cupping over the loins. In about three days signs of improvement were shown, and after seven days more, the hyperalgesia entirely disappeared, the temperature fell nearly to the normal, and the patient was able to move both legs below the knee without causing pain. During the succeeding fortnight the evening temperatures were high, and he lost flesh, but his appetite partly returned; and at the end of this time he was able to stand, when, however, he rested his whole weight on the right leg. A severe rigor now occurred, but, without a rise in temperature; and in a few days afterwards he complained of pain over the left iliac region, and over the anterior spinous process of the left side. A fortnight later an abscess began to point below Poupart's ligament. The abscess was opened antiseptically, and 40 ounces of pus withdrawn, when a thickening was discovered inside the crest of the ilium, and extending down into the iliac fossa as far as could be reached. This thickening disappeared in a day or two, and then the discharge from the wound ceased, and the patient was soon able to walk. The only

apparent results of the illness have been inability to completely flex the right leg on the abdomen, weariness on slight exertion, when the patient is noticed to have a "dragging" gait, and an unusual sensitiveness to cold, producing, on the least exposure to it, a cyanotic appearance of the face and hands.

Dr. Gairdner corroborated the part of the paper with which he was concerned. He was decidedly of opinion that no one would have expected the happy issue, and even yet he could not get rid of the idea that there was some inflammatory disease within the spinal cord itself.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1881-82.

MEETING II.—8TH NOVEMBER, 1881.

DR. HECTOR C. CAMERON, *President*, IN THE CHAIR.

THE PRESIDENT, after referring in suitable terms to the lamented death of Dr. Foulis, proposed that Dr. Finlayson should record the great sense of loss the Society has sustained in his death, and remit a copy to Dr. Foulis' mother. There was no fear of this becoming a precedent, for he had made the motion simply on account of the exceptional character of the man who had died.

Dr. Cameron (as Dr. Clark was unable to be present) showed a case of ACQUIRED TALIPES. We are familiar with ordinary cases acquired by infantile paralysis, where one set of muscles is paralysed, and the opposing set twists the foot in the opposite direction, or with cases due to the healing of abscesses in the muscles of the calf. But the case to-night is rarer. It is not at all exaggerated, but is undoubtedly one of genuine talipes varus, brought about by the habit of walking with the foot inverted, and the outer border resting on the ground. He stepped on a nail, injuring the inner side of his foot. The wound became very painful, and formed an ulcer with hard edges. It was very sensitive when the sore came into contact with the ground, and so he ran about with the foot in the position of talipes varus. At the end of six months, he could no longer put his foot flat on the ground. Whenever he (Dr. Cameron) saw the case, he was reminded

of Scarpa's paper on talipes in children, where cases similar to the present are reported, and which he read over to the Society. In the *Lancet*, some time ago, a converse case to the present was related, where a child, suffering from congenital talipes varus, cut the skin on the outer side of the foot, and, being unable therefore to walk in its usual way, the deformity was cured.

PROFESSOR GEORGE BUCHANAN then showed a boy, æt. 12, who had been operated on for the most extreme EXAMPLE OF CONGENITAL TALIPES VARUS he had ever met. It resisted very free subcutaneous incision in the sole, and ultimately a large wedge-shaped piece of bone was taken from the body of each foot. The boy could now stand erect upon the soles of his feet.

Dr. M'Ewan had a couple of such cases, but he removed the wedges of bone with a chisel instead of a saw. He did not bring the bones together with a wire, but put on a paraffin boot, on which the patient was soon able to walk about. He said he always twisted the tendons, and never cut them, except the tendo Achillis. He applied a paraffin boot, and after the foot was straightened he cut the tendo Achillis.

Professor Buchanan said *Dr. Cameron's* case showed that there was some amount of truth in the assertion of some surgeons, that they were able to cure cases of club foot without cutting the tendons; whether it could be done or not, he himself had never succeeded satisfactorily in doing it. After operation, the patient is left merely in the incipient stage, and the deformity will come back unless the parents are impressed with the necessity of daily everting the foot; but the case shown by *Dr. Cameron* proves that even the efforts of the patient can in some instances overcome the offending muscles in the after treatment of clubfoot.

Dr. Cameron always cut the tendons, and did not see any advantage in not cutting.

DR. COATS showed the SPLEEN FROM A CASE OF LEUCHÆMIA. Large cavities were seen in it, which, at the *post-mortem*, were filled with disintegrated diffuent spleen tissue. Besides the cavities there were various parts which might be called infarctions, because associated with the districts supplied by individual arteries; infarctions are usual in leuchæmia, but they do not often occur along with such great disintegration as is here present. Fibrinous thrombi were found on the mitral valve, which had probably been partly washed away, and given rise

to the infarctions. The recent nature of the case accounted for the softness and great enlargement of the spleen.

PROFESSOR BUCHANAN showed a number of CALCULI, and made remarks which will be found in p. 9.

DR. NEWMAN showed a specimen illustrative of FENESTRATION OF THE AORTIC AND PULMONIC VALVES. There was no murmur during life, and the valves were quite competent after death. From the appearances, however, one would have expected some regurgitation.

Dr. Coats said this was a common condition. Rindfleisch has shown that it is an approach of the semilunar to the form of the cuspid valve, and indicates that the valves are originally formed on the same plan.

Dr. Knox said that Dr. Allen Thomson had long ago recognised that the semilunar valves of the heart were formed upon the same plan as the cuspid valves.

DR. COATS showed A HEART, which was remarkable on account of the enormous size of a thrombus it contained in the right auricle. The thrombus consisted of a large globular portion, part of which had been removed in opening the heart, and a portion which was prolonged into the right auricular appendage. In addition, there was extreme contraction of the mitral orifice, where a thrombus was found almost occluding the opening. The thrombus in the right side was important in connection with the existence of infarctions in the lungs. Infarctions were also found in the spleen, and old ones in the kidneys. Latterly, the patient had suffered from dyspnoea and hæmoptysis.

DR. COATS showed A LARGE BILIARY CALCULUS, which had been passed "per rectum."

DR. RENTON showed AN EPITHELIOMA FROM THE LOWER LIP OF A WOMAN, in whom he had restored the lip, after removing the tumour. Photographs of the case were handed round. He also showed A MULTIPLE CYSTIC TUMOUR OF THE MAMMA which he had removed.

MEDICAL ITEMS.

UNDER THE DIRECTION OF
ALEX. NAPIER, M.D.

Iodoform as a Dressing for Wounds.—Mikulicz (in *Wiener Med. Wochenschrift*, 1881, No. 23), gives results of the use of iodoform in Billroth's wards. He claims that it is in antiseptic qualities equal to carbolic acid, is more easily used, and less apt to cause constitutional disturbance by absorption. Symptoms of poisoning are, however, seen in rare cases, and in the *Deutsche Med. Woch.*, 1881, No. 34, A. Henry describes two fatal cases. (See p. 460 of last volume of this Journal.) The symptoms are of the narcotico-irritant type.

In open wounds the iodoform is sprinkled on the surface and covered with lint and gutta-percha tissue, fixed by a bandage. The results have been very satisfactory; the dressings require changing but seldom, discharge is slight, decomposition never occurs, and there is rapid formation of healthy granulations. In incised wounds healing is even more certain than with carbolic acid, and there is much less fear of absorption causing constitutional disturbance.

Wounds implicating mucous surfaces, as of the mouth or rectum, are usually very difficult to treat antiseptically. In such cases iodoform, applied on gauze compresses, has been found to completely prevent offensive smell, and to cause no discomfort to the patients.

In a case of removal of an abdominal tumour, iodoform was sprinkled into the cavity and the wound closed at once. The patient recovered without a bad symptom.

In septic gangrenous or sloughing wounds the results were especially satisfactory. Sprinkling with iodoform removed all smell in from four to six hours, and the wounds healed rapidly and without discharge, even in some cases where severe constitutional symptoms had already appeared.

In strumous diseases iodoform is said to give such brilliant results as almost to entitle it to the rank of a specific. (See also V. Mosetig-Moorhof in *Wien. Med. Woch.*, 1881, No. 13.) Fungating ulcers with spreading undermined edges and offensive discharge, healed rapidly and completely under a thick layer of iodoform.

In lupus also its effects are gratifying. Riehl (*Wien. Med. Woch.*, 1881, No. 19), gives the results of twenty cases in

Kaposi's clinique. The epidermis, when necessary, having been removed by the application of 5 to 10 per cent solution of caustic potash, the iodoform is laid on in a layer several millimetres thick, and fixed as above described. On removal of the dressings in from three to eight days the disease is found completely removed, redness and swelling gone, and the sore skinned over.

In deep wounds, when the powder would be difficult to apply, Mikulicz recommends pencils composed of one part of iodoform to two of cacao butter, and for injection a 20 per cent ethereal solution. The smell of the drug can be overcome by adding 1 m bergamot to 10 gr. of the iodoform, or moistening with an ethereal or alcoholic extract of Tonquin bean. Local irritation can be effectually prevented by previously oiling the sound skin near where the iodoform is to be applied.—*Centralbl. f. Chir.*, 1881. Nos. 32 and 39.—D. M'P.

Iodoform Subcutaneously in Syphilis.—Dr. E. Thomann, of Graz, has treated a series of cases of recent syphilis, with well marked skin manifestations and glandular enlargements, by the administration of iodoform subcutaneously, and states that even after ten to twelve injections great improvement in all the symptoms is manifest. The preparation he used consisted of 6 parts of iodoform suspended in 20 parts of glycerine; this was administered in doses of 0.3 grm., increasing gradually to 0.75 grm. No abscesses were produced, though the skin became slightly red and tender, and the spots operated on were harder than the surrounding parts, and slightly swollen for a few days. Iodine may be detected in the urine in two hours after the first injection; no smell of iodoform was perceptible, either in the breath, perspiration, or urine. There was no constitutional disturbance or drowsiness, and the temperature and pulse were unaffected. A solution of iodoform in almond oil (0.3 grm. in 6 ccm.) was also tried, but proved too irritating; it caused an erysipelatous reddening of the skin. The feeling of local hardness was absent however, as the oil was so much more quickly absorbed than the glycerine preparation.—*Cbl. f. d. Med. Wiss.* 29th Oct., 1881.

Experiments on the Infectiousness of the Blood and Urine of Tuberculous Animals.—V. Lentz, of Greifswald, in his inaugural dissertation, describes the results of a series of experiments on rabbits.

In six rabbits he injected fresh blood of tuberculous rabbits into the lungs through a tracheotomy incision. In all of

these, killed in from 92 to 216 days afterwards, he found miliary tubercles in the lungs, and in four of them in the liver as well. In one he found caseous masses in the lungs.

In all of four in which the blood was injected subcutaneously (killed after from 125 to 148 days), he found miliary tubercles in the lungs, and in two of them in the liver as well.

In one the blood was injected into the joint and adjoining connective tissue. The knee became swollen by the third day; on the 18th the animal died, and dissection showed stinking caseous suppuration in the joint, and tubercles in the lungs.

Two rabbits were subjected daily, for 71 days, to an atmosphere charged with steam, containing from 30 to 40 c. cm. of freshly voided urine from tuberculous animals. After death the lungs were found full of minute subpleural ecchymoses and numerous peribronchial tubercles.

With three others "phthisical" urine, which had been allowed to stand for several days in a warm room, was used. One died on the ninth day, after aborting, and examination showed in the peribronchial connective tissues numerous masses of round, well defined nucleated cells, "undoubtedly commencing tubercles." In the others (killed on the 48th and 60th days), tubercles, less numerous, but more uniform in nature and position than in the rabbit treated with fresh urine, were found.

In all the sections of tissue examined, a decided thickening of the arterial coats was observed.—*Centralbl. f. Chir.*, 1881. No. 33.—D. M'P.

Treatment of Eczema.—Dr. Püntz advocates the use of the soot from burnt pine in the treatment of eczema. He claims for it that it is entirely painless; is applicable to all forms of the disease; causes no irritation either in the ear or in the eye; is not poisonous, so that it can be applied to the breasts of a nursing woman; and that its curative powers are surprising.

He mixes the soot with lard, and applies it every morning and evening for six days, then rubs it gently off, and repeats the operation till all is healed. He has had good results from this treatment in impetigo, prurigo, lichen, erythema papulatum, &c.—*Memorabil.*, xxvi, 4, 1881. *New York Med. Journ.* Nov. 1831.—J. A. A.

Chlorosis.—Dr. Zander's article on Chlorosis bears par-

ticularly upon the matter of treatment. The effects of iron, he remarks, are apt to be transitory—so soon as its administration is suspended, the phenomena of the disease reappear. The pathology of the affection lies not so much in a mere deficiency of iron in the blood as in a lowered state of the general nutrition, usually dependent on enfeebled digestion.

Treatment founded on this theory has given excellent results in the author's hands. He makes use of hydrochloric acid chiefly according to the following formula:—Hydrochloric acid 2·0–4·0 grammes ($\frac{1}{2}$ to 1 drachm); water 200·0 grammes (about 6 $\frac{1}{2}$ ounces). One or two tablespoonfuls to be taken a quarter of an hour after meals. In a few severe cases he has used pepsin in addition.—*New York Med. Journ.*, Nov. 1881, from *Arch. f. Path. Anat. v. Physiol. v. f. Klin. Med.*, lxxxiv, 1, 1881.—J. A. A.

Mistletoe (*Viscum Album*) in Heart Diseases.—Dr. R. Park states that in this drug will be found a remedy of no mean physiological power, and an excellent substitute for digitalis. He has used it in a large number of cases of heart disease in which, whatever the exact pathological condition might be, incompetency and tumultuous distressing cardiac action were the immediate symptoms calling for treatment, giving half-drachm doses of the tincture every four hours, "with the very best results." No formula for the preparation of the tincture is given.—*The Practitioner*. November, 1881. [Dorvault says, in *L'Officine*, p. 535, that mistletoe is an astringent and emetic, that it was formerly much used against epilepsy, and that its powers as an abortive are equal to those of ergot of rye. From the bark and berries is extracted the proximate principle named *glu* by the French chemists, the substance to which bird lime owes its viscosity; treated with ether, *glu* yields *viscine*, which is soluble, and *viscosine*, which is insoluble. Wood & Bache, in the *U. S. Dispensatory*, 1867, p. 1620, observe that this drug is said to be capable of producing vomiting and purging when largely taken. A case is mentioned in which a child three years old was poisoned by eating the berries, the symptoms being vomiting, prostration, insensibility, fixed and contracted pupils, coldness of skin, and convulsive movements of the extremities; an emetic brought away a number of berries, and the child recovered. The plant was formerly regarded as a powerful anti-spasmodic, and was employed in "epilepsy, palsy, and other nervous diseases." The leaves and the wood were given in the dose of a drachm in substance, and of an ounce in decoction.]

Nasal Polypi Treated with Tannin.—M. S. Martin states that in six cases of nasal polypus he has succeeded in effecting a cure by means of injection of a watery solution of tannin. The solution he employs consists of one part of officinal tannin dissolved in ten parts of distilled water; this is injected into the nasal cavities morning and evening, with a glass syringe.—*Bull. Gén. de Thérap.* 15th December, 1881.

A Modification of Lister's Antiseptic Dressing.—In the *New York Medical Journal and Obstetrical Review* for December, 1881, Dr. James L. Little, Professor of Clinical Surgery in the University of the City of New York, states that, while having full confidence in Mr. Lister's antiseptic method, he, like many others, has long recognised the great difficulty that must needs be experienced by the general practitioner in attempting to carry out the minute details of the dressing. Dr. Little has for several years been surgeon to a large factory in New York, in which three thousand hands are employed, and where injuries by machinery are quite frequent. These injuries consist chiefly of wounds of the hands and fingers, caused by their being caught in the cog-wheels and other parts of the machinery. In many cases the fingers are torn off, tendons are pulled from their sheaths, joints are opened, and the hands are often severely crushed and lacerated. In all of these cases he has, for the past six years, been using the following simple antiseptic dressing:—Having put the parts in a condition for dressing, he washes the wound in a solution of carbolic acid of the strength of one to twenty; he then covers the parts with a thick layer of borated cotton, and then snugly and evenly applies a simple gauze bandage. At first he used bandages made of antiseptic gauze, but for the past three years has used those of plain uncarbolised cheese cloth. These thin bandages distribute the pressure more evenly over the cotton, and are more easily saturated with fluids than those made of unbleached muslin. The patient is instructed to keep the outside of the dressing wet with a solution of carbolic acid of the strength of one to one hundred. The author employs Squibb's solution of impure carbolic acid, which is of the strength of one to fifty, and which, when mixed with an equal bulk of water, gives a solution of the desired strength. The parts should be kept at rest, and the dressings may be left undisturbed for several days, unless there is pain, rise of temperature, or discharge through the dressings. These conditions are always to be considered

indications for renewing the dressing. In many cases where rubber drainage tubes have been used they may be removed at the second dressing, and, if catgut has been used for sutures, this second dressing can be allowed to remain on for an indefinite period. In a number of cases of lacerated wounds the first dressing has been allowed to remain on until the wound has entirely healed. In these cases the external use of carbolic lotion was discontinued after the fifth or sixth day, and the dressings would become dry and hard, the wound healing, as it were, "under a scab." The patient should be instructed to loosen the bandage at once if any pain occurs. Out of nearly three hundred cases of open wounds involving the fingers and hands, thus treated, not one has been followed by inflammatory symptoms.

Ol. Santalis Flav.—With reference to this remedy, Dr. R. Park finds that it is no use prescribing it for the purpose of *curing* a gonorrhœa, if by the term is meant the urethritis or other pathological condition causing discharge. But it will get rid of the most troublesome symptom—the "running;" this it will restrain at once, frequently stopping it in course of 48 hours. It must be continued for quite a fortnight after entire cessation of the discharge. If within 48 hours the running is not arrested—and this happens in some cases—another drug should be employed or therapeutic procedure adopted. Twenty drops is a full dose, as this quantity invariably produces griping of the bowels, and dull lumbar aching. Dr. Park suggests that the drug acts in two ways—on the pelvic and genital nervous system, and on the suppurating surface as an antiseptic or contra-purulent. It certainly has a drying effect on all the mucous surfaces, and also appears to be a special stimulant to unstriated muscular fibre, and in this way is probably constringent.—*The Practitioner*. December, 1881.

Injectons of Bromide of Potassium in Gonorrhœa.—Dr. Cambillard, in the *Journal de Thérapeutique* for 25th October, 1881, points out how all authors acknowledge the exhausting sleeplessness, the malaise, the nervous irritability, and the intolerable suffering that nocturnal erections induce in gonorrhœa. After having indicated the various modes of treatment directed against this symptom, camphor, lupulin, essence of santal, subcutaneous injections of morphia in the perinæum, injections of chloral into the urethra, pills of extract of opium or opium fomentations, he, following the

example of his teacher, M. Mauriac, insists upon the superior efficacy of injections of bromide of potassium into the urethra.

These injections are by no means painful; at the most, in some cases, a slight smarting is caused. They are repeated four times in the day, and the last is administered just before going to bed. They are allowed to remain in the canal one or two minutes, otherwise they are inefficacious. Here is the formula:—

Water,	.	.	.	.	.	150 grammes.
Glycerine,	.	.	.	.	.	10 "
Bromide of Potassium,	.	.	.	.	.	6 "
Laudanum,	.	.	.	.	.	2 "

He reports 18 cases, and he has noted in 15 a rapid diminution or the complete suppression of the erection. He attributes this to the local anæsthesia, to that remarkable property which the bromide possesses of diminishing the mucous sensibility and moderating the reflex excitability. —*Lyon Médical*. November, 1881.—J. A. A.

Perchloride of Iron in Internal Hæmorrhages.—In a thesis presented to the Société de Thérapeutique de Paris, Dr. Guestre protests against the practice of prescribing the perchloride of iron indiscriminately in all cases of internal hæmorrhages. Its action as a local hæmostatic, due to its coagulant powers (the formation of insoluble albuminates), is undeniable. But if the drug acted in this way internally, either along the digestive tube or in the capillaries, gastro-enteritis and thrombosis would result. Nor does it act directly by causing contraction of the smaller vessels; even when applied directly, and in concentrated solution, it has no such action. Dr. Guestre seems to adopt the views of Rabuteau and of Cervello with regard to the perchloride of iron: that it is not eliminated by the kidneys in any quantity; that it acts internally, not as a coagulant, but as a simple astringent; that the protochloride might be used instead of the perchloride with the same results, the latter being reduced to the state of proto-salt before absorption; that the influence of the chlorides of iron is exerted principally on the heart and vessels, cardiac action becoming slower and feebler, the vessels contracting, and the blood-pressure rising; and that it is on these cardiac and vascular effects that the hæmostatic properties of iron depend. Dr. Guestre also proved, by experiment on himself, that half a gramme of perchloride iron taken internally, at first reduced the amplitude of the pulse-tracing, and diminished

the dirotism ; a further half-gramme dose taken half-an-hour after, produced still further diminution, and also made the heart's action slower ; eighty minutes after taking one gramme the volume of the pulse was much reduced, dirotism had almost disappeared, the line of descent was longer, while the retardation of the heart's action was very marked. Dr. Guestre concludes that the ferrous salts are as powerful hæmostatics as the ferric salts. Clinical evidence is also against the ferric salts ; it is shown with regard to purpura in particular, that treatment without iron is more successful than with that drug. Bearing in mind the excellent results obtained with ipecacuanha in hæmoptysis and ergotine in metrorrhagia, and on the contrary, the frequently injurious action of the perchloride of iron in gastrorrhagia, it seems scarcely advisable to administer this remedy as a hæmostatic, at least by the mouth.—*Bull. et Mém. de la Soc. de Thérap.* 15th Nov., 1881.

Substitutes for Nitro-Hydrochloric and Nitrous Acids.

—Dr. E. A. Cook is of opinion that the conflicting statements made regarding the therapeutic action of the above named acids are due to the changes which these bodies undergo soon after preparation. Thus, it is well known that with nitro-hydrochloric acid the best results are obtained by mixing the strong nitric and strong hydrochloric acids in due proportions, and using them shortly thereafter. Such a mixture is orange coloured ; after a time, however, its colour changes to lemon-yellow, the odour of chlorine is lost, and the mixture, though as powerful chemically as ever, is therapeutically useless, the difference in action being probably due to the disappearance of some unstable compound, such as (1) an oxide of nitrogen ; (2) free chlorine ; (3) an oxide of chlorine ; (4) or a compound of an oxide of nitrogen with an oxide of chlorine. In the case of *acidum nitrosum*, which, as sold in the shops, consists simply of strong nitric acid charged with vapours of some of the lower oxides of nitrogen, the good effect must be due, if not to nitric acid, to the lower oxides referred to.

In Dr. Cook's first efforts in this direction, he provided the nurse with two separate bottles of strong acid, with instructions as to dropping, mixing, and diluting ; and though improvement in cases of torpid liver with congestion was great and rapid, the objections to this mode of administration were too obvious. A substitute for the old nitro-hydrochloric acid was therefore desirable ; and as the virtues of that

remedy do not depend on either of its component acids, it struck Dr. Cook that the end would be attained if a compound could be given, containing but a small quantity of those acids, and at the same time highly charged with the products of their decomposition. Nitrite of soda mixed with dilute hydrochloric acid evolves free oxides of nitrogen; chlorate of potash, with a dilute acid, gives off oxides of chlorine; and a mixture of these salts with an acid or with the acid gastric juice will give rise to these mixed oxides. The most convenient prescription is:—

- R. Sol. Sodæ Nitritis (1 in 4).
 Sol. Pot. Chlorat (1 in 4) āā ʒii. M.
 R. Acid. Hydrochlor. dil.
 Aq. āā ʒii. M.

One teaspoonful of each mixture to be added separately to a wine-glassful of water, and taken after meals. When nitrous acid is to be administered without the chance of any chlorine oxides being present, the solution of chlorate of potash is omitted, and replaced by an equal quantity of water.

Cases suitable for the mixed acids are those of torpor of the liver with congestion and catarrh of the bile ducts. The relief obtained in every case from their administration has been most marked, the motions becoming healthy, and the skin and conjunctivæ clear. The cases suitable for the nitrite and hydrochloric acid alone are those of loose diarrhœa, dyspepsia, and chronic irritability of the stomach.—*The Practitioner*. Nov. 1881.

Treatment of Goitre by Ammonium Chloride.—Dr. A. D. Stevens records six cases of cure of large goitres by the administration of ammonium chloride. The dose given was 10 grains, dissolved in water, and repeated thrice daily for two months or more. There was no deterioration of the general health from the prolonged use of the drug, but rather the reverse.—*New York Medical Tribune*. Feb., 1881.—G. S. M.

Radical Cure of Goitre.—In the case of a young man, 24 years of age, who had suffered from goitre for eight years, all treatment of which had been of no avail, Dr. Paolo Droecchi, of San Francisco, recently successfully performed extirpation. The method adopted was that of Fiorani (of Lodi, Italy). He makes an incision through the skin from one pole of the tumour to the other, and cuts stratum after stratum, as in the operation for hernia. If large blood-vessels are met with, he

cuts them between two ligatures. When the tumour is reached, it is very easy, by the aid of the finger, to isolate it down to the peduncle; the operator then applies interrupted sutures, and separates the connecting stitches, so as to allow the tumour to pass through like a button. An elastic ligature is now passed round the neck of the tumour, and the stitches tied. The operation is quickly performed, and the tumour falls off in ten or twelve days. Fiorani has had three successful cases. In Droecchi's case the elastic ligature was applied, but owing to threatened asphyxia, it was cut, and the tumour was carefully dissected out. Few unimportant vessels had to be tied. Drainage tubes were inserted, and the wound treated antiseptically. In a fortnight perfect recovery had taken place. The tumour weighed sixteen ounces.—*San Francisco Western Lancet*. August, 1881.—G. S. M.

Effects Produced by Cantharidine.—M. Cornil records the effects produced in the rabbit by the internal exhibition of cantharidine as follows. Twenty minutes after injection the cavity of a glomerulus of the kidney presents the following lesions:—A large number of white corpuscles are found between the envelope of the capsule of Müller and the vessels which compose the glomerulus of Malpighi; besides, the uriniferous tubules contain a granular exudation which fills and obliterates them. At the end of an hour the lesions are characterised by the proliferation of the cells, which, although they are round, become by mutual pressure irregularly pavemented: then there exists a true catarrh of the uriniferous tubules. In the bladder the lesions are similar, but superficial. In the lungs the smaller bronchi are filled with white corpuscles, pus corpuscles; these lesions, which indicate inflammation of the mucous membrane, are found also in the parenchyma, and are due to the cantharidine being carried to the organs in the circulation. In the larynx and trachea similar lesions are seen. When cantharidine is applied to the skin sufficiently long, similar lesions are found. Hence M. Cornil concludes that blisters should only be applied for three or four hours, and not for fifteen or twenty, as seems to be the custom in France.—*La France Médicale*. 15th February, 1881.—G. S. M.

Treatment of Sciatica by Copaiva.—Any suggestion in the way of successful treatment of obstinate sciatica will be welcomed by those who see much of it. Hence, it may be worth while to note that Dr. H. C. March has met with

excellent results in the most obstinate cases from the administration of copaiva. He does not exhibit it until the bowels have been cleared, and any gouty, rheumatic or anæmic condition relieved. If after that the pain continues, he administers copaiva as follows:—

R Bals. copaiva,	. . . . .	3 iv.
Tr. lavand. co.,	. . . . .	3 iv.
Tr. hyoscy.,	. . . . .	3 iii.
Pot. bicarb.,	. . . . .	3 i
Mucilag.,	. . . . .	3 i
Aquæ,	. . . . .	3 vi. M.

Sig.—A tablespoonful every four hours.

More recently he has employed the resin in the form of pills. He suggests that its action may have some connection with its power of producing diuresis in certain forms of hepatic dropsy.—*Med. Times and Gazette*. 26th February, 1881.—G. S. M.

Iodine in Chlorosis.—In cases of chlorosis, especially hæmorrhagic chlorosis, in which iron has failed, Dr. E. Trastour recommends the following combination:—

R. Iodi,	1 gramme.
Potas. Iodid.	10 „
Aq. Dest.	300 „ M.

Dose—a teaspoonful.

This will generally restore the health in two or three months. The obstinate anæmia which so often follows lactation yields very quickly to the same treatment.—*Bull. Gén. de Thérap.* 15th Nov., 1881.

Pilocarpin in Diphtheria.—During the months of May and June, 1881, Dr. Archambault treated twenty-one cases of true diphtheria, occurring in children, with nitrate of pilocarpin alone, by the mouth or subcutaneously; the result, nine recoveries and twelve deaths, “was deplorable, worse than that which might be obtained by simple expectant treatment.” All the nine cases which recovered, with the exception of two, were mild enough to have recovered under any treatment; nevertheless, it must be stated that in these the false membrane was detached more completely and promptly than usual. Of the twelve cases which died, the author states that they were very grave from the outset, and that he would have considered pilocarpin a valuable remedy if it had saved half of them; and yet it is just for cases of this grave nature that a reliable remedy is wanted.—*Bull. et Mém. de la Soc. de Thérap.* 15th Nov., 1881.

The Pre-Ataxic Stage of Locomotor Ataxia.—From the observation of a considerable number of cases, Dr. Dowse has come to the conclusion that the following signs are diagnostic of the pre-ataxic stage of locomotor ataxia:—

Inequality of pupils.	Dysæsthesia	} very transitory.
Small pupils.	Anæsthesia	
Paresis of third left nerve.	Hyperæsthesia	
Cutaneous fulgurating pains,	Visual colour-changes.	
Sexual excitement.	Gastric and intestinal crises.	
Transitory inco-ordination of the lower limbs.	Variable temperament.	
Variable patellar tendon reflex, rarely absent.	Retinal changes.	
Spinal irritability.	Mental depression.	
	Insomnia.	

In his lecture (which is given in full in the *Med. Times and Gaz.*, 1st October, 1881), he indicates the relative importance of many of these symptoms. He regards fulgurating, cutaneous pains, and plantar and dorsal, limited anæsthesia, as infallible signs of the pre-ataxic stage. He also places much reliance on the eye-symptoms. To the knee-reflex he does not attach the same value as other physicians. He records several interesting cases in which this reflex was absent on examination, but returned immediately on a continuous current of electricity being passed through the cord. In many cases of so-called nervous dyspepsia and biliousness, he has recognised the nature of the disease by finding diminution or absence of this reflex. While admitting that many cases of advanced ataxia have proved obstinate to all his treatment, he maintains that there is a stage of the disease when, by prompt and energetic treatment, "we may safely hope for good and successful results." His treatment of that stage consists in dry cupping and the actual cautery, with the internal exhibition of iodide of potassium, mercury, bromide of potassium, and ergot, &c., according to the requirements of each case.—G. S. M.

Puerperal Temperatures.—Dr. A. D. Leith Napier summarises a series of observations on puerperal temperatures, in the following sentences:—

(1.) Temperature varies in the normal puerperal condition. In certain individuals it may be as low as 97° F. or as high as 99·5° for a week or more without a single bad symptom. The average for the three or four days immediately succeeding parturition is 98·5° to 99°; the subsequent heat is modified

by the hour of delivery, but to only a small extent. The healthy puerperal range is 2.5° .

(2.) No temperature over 99° (unless accounted for by individual nervous susceptibility) is normal after four days. The healthy patient may have an *occasional* night temperature of 100° or 101° within the first four or five days, but a continuing, or even a morning or day record like this requires an explanation.

(3.) Slight causes, *e.g.*, constipation, retention of urine, etc., give a rise to 99° - 100.5° , sometimes more.

(4.) Retention of clots or secundines, 99° - 101° , or upwards; 103° at times.

(5.) Weid has a sudden late temperature of 103.5° , with rapid pulse; the heat falls quickly with the development of the local affection. Other cases of mastitis are mildly febrile for several days.

(6.) Metritis (endo- and peri-) gives record of 103.5° , with slow pulse.

(7.) Peritonitis has a single rigor and a sudden early temperature of 104° or upwards; the pulse is wiry. General peritonitis, if severe, 105.5° - 106° .

(8.) Pelvic cellulitis, oöphoritis, parametritis, &c., have a heat of 101° - 102° ; the pulse is weak and irritable. Recurrent rigors mark fresh deposits of pus, and are followed by temporary increased heat, 104.5° .

(9.) Pyæmia and uterine phlebitis average 103° , perhaps more. Cases in which the veins are rapidly affected are soon 104.5° - 106° , and end speedily. Pyæmia is frequently late in development, 7-10 days.

(10.) Septicæmia varies from 102.5° - 107° . The heat is never less, at least for some period of the twenty-four hours, than 102.5° , if the case is properly established. The temperature is liable to variations, but after the normal has been reached is less so than in pyæmia. There is no security from remission till the night temperature is under 100° . Recovery may take place after 106° , but is rare.

(11.) Mental emotion may show 104° or even 106° , and we may sometimes have in addition symptoms resembling metro-peritonitis. These cases do not persist, and are generally normal in less than forty-eight hours.

(12.) If the temperature does not rise within ten days from delivery, there is little risk of grave disease unless from gross imprudence in exposure to cold, or zymotic infection.

(13.) Although the temperature is moderately low, 100° to 101° , so long as the pulse continues 120 or more we are not

safe from relapse. No anxiety need be felt so long as the temperature is kept under 102° . However fast the pulse, if the temperature continues low the prognosis is favourable. An evident exception pertains when temperature is low from collapse. If the temperature is persistent at 102° , or frequently recurs to this point, there must be an abnormal organic condition.

(14.) Temperature should be observed night and morning for the first seven days, and daily for three to seven days after, more especially if any instrumentation has been required for delivery, or if zymotic or epidemic disease prevails. When an abnormal temperature is discovered, it should be reduced to the normal as early as possible by one or other agent. It is of the highest moment to bring it down to 100° and keep it there or lower.—*Edinburgh Medical Journal*. November, 1881.

Action of Duboisia on the Circulation.—After performing a long series of experiments on rabbits, Dr. G. A. Gibson has arrived at the following conclusions regarding the action of duboisia on the circulation:—

1. Duboisia, in quantities not exceeding 0.005 gramme, raises the arterial blood pressure, without materially affecting the pulse rate.

2. In quantities not exceeding 0.05 gramme, it diminishes the blood pressure and lessens the pulse rate.

3. In quantities of 0.05 and upwards, it causes death, with the heart in a state of diastole.

4. Upon the heart itself duboisia has but little action, except in very large doses—*i. e.*, doses of more than 0.05, and then it causes arrest of the heart in diastole.

5. Duboisia stimulates the central inhibitory mechanism.

6. The alkaloid paralyses the peripheral inhibitory apparatus.

7. Duboisia stimulates the central vasomotor apparatus, and causes contraction of the arterioles, in small doses; in large doses, it lowers the activity of the central vaso-motor mechanism, and dilates the arterioles.

8. Duboisia has no influence over the sympathetic nerve.—*Journal of Anat. and Physiol*. October, 1881.

THE
GLASGOW MEDICAL JOURNAL.

No. II. FEBRUARY, 1882.

ORIGINAL ARTICLES.

STUDENTS' MEDICAL SOCIETIES AND THE TIMES
WE LIVE IN.

By PROFESSOR CLELAND, M.D., F.R.S.

*(An Address to the Glasgow University Medico-Chirurgical Society,
delivered in November, 1881.)*

GENTLEMEN,—It is indeed with pleasure that I come here to-night, endeavouring to do what I can for the benefit of a Society in which I take a deep interest. But it must be confessed that, in first contemplating my position, this pleasure was mixed with some slight sense of discomfort of the kind which one is liable to experience when called on to speak without feeling that one has important matter of which to disburden himself before an audience. However, the age we live in, like every other age, has its characteristics, the necessary consequences of innumerable antecedents, and only very partially capable of modification; and in these, I fancy, are, to some extent, to be found, not only the explanation of my standing before you to-night without feeling that I have any special mission on this particular occasion to address you on any one particular topic, but the explanation of what is far more important—the habits of talk and literature with which we are surrounded. As for my own present position, it is always pleasant to accept honour at the hands of students; for one has the satisfaction of feeling that it is a most intelligent body which bestows it; and, as I have already

stated, it is particularly gratifying to take one's turn in the honorary presidency of such a Society as this. It is a gratification which could only be increased by seeing the Society increasing in members, laying more thorough hold on the work which it proposes to itself, and in every way becoming rooted and extended as we should all like to see it. I might, instead of addressing you, as I believe I am about to do, on the rise and progress of talk in general, choose for myself some professional topic, and so set the example of doing what I recommended to you when, on a former occasion, I indicated the themes which I humbly thought ought to occupy the attention of such a Society as this. But then you will note that any such dissertation from me would lack the advantage—at least so I fear—of serving as a peg to hang that free discussion on which, in medical topics, is the most important object of this Society to foster. And the probabilities against its combining entertainment and instruction would be great, since, if I chose an anatomical theme, you would consider yourselves let in for a lecture, such as you have enough of elsewhere, while if I wandered into the practical paths of the profession, every young or old practitioner in Glasgow, forgetful of the claims of a former clinical teacher of the West of Ireland, would ask you, "What does he know about practice?"

The position, then, in which I find myself to-night, called on to give an address, not for the sake of what may be in it, but rather for the sake of doing it, illustrates this doctrine, that the performances of collective bodies are regulated by different rules from those which regulate the conduct of individuals. That is a very extensive law, having many more important applications than that which leads me to notice it. For instance, there is nothing more common than to confuse consistency of conduct in corporate bodies, and consistency of conduct in individuals, as if they were the same thing; and we talk of a board stultifying itself when a small quorum comes to a decision at one meeting and another small quorum otherwise composed decides in the opposite sense at the next meeting, although it may happen that no single person has voted in both the conflicting majorities. Doubtless such action in a corporate body is inconvenient, and in some instances morally objectionable in a high degree; yet to taunt any of the members composing it with inconsistency is absurd. But the point which I have at present got more to do with is this, that while it is one of the highest—or at least most important—duties of a private individual to hold his tongue when he

has got nothing to say, the speaking, where bodies of people are collected together to speak or to hear, must be regulated by different and more artificial principles. If the clergyman only spoke when he had something particular to say; perhaps pulpit oratory might have a more intense flavour of purpose about it; but it may be questioned if in some instances the predications would be regularly conducted week after week. This same regularity, week after week, is required in such a Society as this; and, artificially, must its agenda be prepared. It would not suit to trust entirely to chance, and wait patiently till some member should have an inspiration—an inspiration that might never come, or might lie still-born in the lap of modesty. You provide for two weeks by ordering presidential addresses, and your managing committee has hard work arranging a bill of fare to go over all the rest. It is a difficult matter; and it has to be done. Let me help you, if I can.

It might be an advantage to make a long list of subjects, which may occur to you as suitable for students to take up and investigate. Many a student will be willing enough to work at a subject suggested to him, who will not sit down and make up his mind to find out for himself such a subject. The list ought to contain themes of a histological, zoological, and botanical kind, as well as others of a more practical description, so as to encourage men to work for themselves and educate their own eyes and hands as well as read up what other people say. It would be an advantage that such a list should exist, that members may choose from it subjects for reading dissertations on in the following winter; for in that way they would get the summer to work their subject out. It would be invaluable, if it could be managed, to go further, and make it a rule that there should be a compulsory essay from each member in turn. If the numbers of the Society were what they ought to be, it would not come round to any member to read his dissertation till after he had been a year or more in the Society. Such a compulsion would, however, be difficult to enforce unless membership held out such advantages that the prospect of having to write a paper would not deter students from becoming members. The advantages of membership might possibly be increased if the subscription were raised, so that rooms might be hired, periodicals taken in, and perhaps a few microscopes kept. But it is not for me to do more than suggest the possibility of such things.

As regards the selection of subjects for essays and debates, I

have on a former occasion suggested the importance of making them instructive. It is quite right, no doubt, to try to make them attractive; and it may seem that subjects which require little or no information to discuss, or at least which can be discussed with little reference to matters of a technical kind, may be made more interesting to junior students. But not to mention that juniors ought to be led in the way in which they should go, and not made to imbibe the evil idea that this Society follows after the vain customs of a mere debating society, and talks for mere talking's sake, to make its members' tongues more supple; it must be kept in mind that such a method of attracting juniors has justly the effect of deterring good seniors; and the strength of such a Society as this ought to consist in young graduates and senior students. Such men, with opportunities of seeing much that is interesting in hospitals, should be encouraged as much as possible to come here and tell the histories of remarkable cases: and let them be discussed among you with that freedom and that independence of opinion which are so important for students and young graduates to cultivate. The faculty of readiness in discussion is not to be despised, but the subjects on which it should be exercised in a Medico-Chirurgical Society should be of a scientific or professional kind. Those of you who have taken part in the Society's discussions and have prepared for them, know that in the preparation lies one great benefit of such an association. You fix your thought on a subject; you set your brains to work to find out what is to be said on one side or other, or what novel views may be held about it. You note the references in the books which you first consult, look up the authorities referred to, find other references in them, and discover quickly that you have a totally different idea of the literature of the subject from what you had when you began, and that you have made progress in the art of learning what has been done in any subject.

How unimportant, then, after all, is any presidential address whatever, compared with a night of good hard debating among yourselves, worked for and read for as it ought to be. My business, as I understand it, is not to add an additional lecture to the winter session, but to help you if possible to realise more completely a means of improvement wholly different from listening to lectures, calculated to develop judgment and self-reliance, qualities, without which mere book knowledge and the dicta of teachers, nay, even the industrious exercise of eye and ear at the bedside, will be of little use to you in after life.

In expressing his opinion on matters of theory and practice, it is true that the student has to bear in mind his inexperience, and to train himself in discerning the just place to be given to that modesty which, within due bounds, is always favourable to the grasp of truth, though not always a help in the race for position. But, on the other hand, he has this advantage, that not yet is he let loose in the open stream of life with all its distractions. He need have no other object before him but to grasp his problem in all its aspects, consider all the arguments, and judge to what conclusion they appear to tend.

Not thus is much of the talk that floods the world evolved. The rapid developments of commerce, the increased freedom of communication, the growth of towns, the consequent intensification of the struggle for existence—these exercise an enormous influence on prevalent talk and opinion, as can be easily noted in the ephemeral literature of the day. The circumstances which I have now mentioned are none of them matters of choice, but are results of that natural evolution which society undergoes by the trituration of its elements, and the conservation of the experience, discoveries, customs, and errors of one generation as the basis from which the next is compelled to start. Thus, commerce has not come to its present condition arbitrarily, but by slow steps, each proceeding naturally from antecedent conditions: the development of credit, for example, has been a necessary evolution, only partially capable of regulation by legislation; and it is not even to be taken hastily for granted that legislation, to be healthy, must necessarily be in the direction of favouring this or any other natural evolution. Freedom of communication, itself the result of scientific discovery, becomes the means of making more widely available the results of achievements in the way of manufacture, to which science has also lent her aid. The complex machinery, required to supply wants of continually growing complexity, has tended to increase our towns, increased employment, and led to increased population. The result of all this is the existence of comforts, *commodities*, and information unknown to previous generations, and a corresponding increase in the intensity of the struggle for existence.

Now, I say that these things exercise an influence on prevalent literature, thought, and conversation worthy of the closest examination. The public that reads is increased, and a literature springs up to satisfy the demand, at once influencing and influenced by that public; new avenues to livelihood by writing are opened up which crowds of competitors rush into. Their

inspiration to write is in large measure not a mission, but the pressure of those considerations which drive men into every line of business. Doubtless, the infrequency of work done for the work's sake is a feature peculiar neither to writing nor yet to the present time. But the greater the struggle for existence the greater the amount of work not done for the work's sake, and the less the time to do it in. It is very extraordinary the inundation of print that every morning sees, and still more so that so large a proportion of it should be so creditable as it is; but he who supposes that even the best of newspaper editors can generate wisdom daily by the column must have great faith in the powers of humanity and be easily satisfied with flimsy gear for wisdom. High pressure and competition within certain limits are, no doubt, stimulants to thought, producing activity and sharpness. They are inevitable, and it is well that they bring advantages with them. But it must ever remain true that quiet contemplation, unimpassioned and continuous, is necessary for ripe judgment; and it must remain equally true that a similar earnest quietude is necessary to appreciate ripe judgment in others. The hot hurry of an atmosphere of bustle and struggle is favourable to abundance of mental effort, and even in some sense to brilliance, perhaps mostly of the meretricious sort called smartness, but not directly favourable to profundity and truth. The consideration what will pay becomes dominant over every other: one must get a hearing, and the public rushes along so fast and has so many on every side calling out to catch its attention, that it most naturally turns to what chimes with its opinions and appeals to its prejudices. It is a happy thing that all paths are not equally in the throng, and that they who think have the chance to influence others who talk, and that thus much third-hand and considerably adulterated result of thinking for the sake of reaching truth finds its way into the busiest thoroughfares; and happy it is that the untrue has such a faculty of working its own annihilation by its sheer unworkability that the very ferment of life by its errors evolves progress after all.

I do not say that there is less love of truth or less progress of truth now than in other days. For any man to sit down and utter sage jeremiads, lamenting over reality as a thing that was, and sham as the universal characteristic of all that survives, has itself a good deal of humbug. It is not thus, nor with such a weary look, that the best work has ever been done. But it is well, as dispassionately as may be, to study the operation of natural causes on the pursuit of

truth, and, among other things, the inevitable results of the conditions of existence; and I take it that, in an age when vast masses of society are thrown into increased activity, driven into closer contact and intenser struggle, the prolific and the rapid must have a great advantage. Moreover, the rapidity required is not mere rapidity of production, but the production of what can be rapidly laid hold of, particularly by those who, most involved in the whirl, become in great part the means of communication between those more quietly situated in distant eddies. But earnestness in the masses in such circumstances is increased, not diminished. Life is made earnest by the severity of its contests, and the points of contact with other lives are multiplied. The earnest appetite, fed with windy food supplied in the way already indicated, finds itself with unsatisfied craving, and clutches often at nourishing lumps of nutriment solid enough, but perhaps crudely cooked and unfit for its digestion; the result being gripes too often, and much that is unpleasant to itself and others. Yet the healthier constitutions survive it all and work out amid many errors much that is good. It were foolish to abuse the age; but it must be allowed that it is a disadvantage which an epoch of unequalled activity labours under, that not always easily do the honest appetite and wholesome food come into contact. On the other hand, when printed matter was less abundant, it was not uniformly wise, and the wisdom that was in it reached a much smaller number directly than is reached now, and must have been terribly adulterated at the hands of the middle men who diffused it by oral tradition. No wonder if the uncultured clown, as his eyes began to open, was persuaded above all things that he had been purposely kept in the dark, and considered himself, as he began to think for himself, a marvellously enlightened man competent to form the best possible opinion on every possible subject.

But the allegation that crude talk is a more than sufficiently abundant commodity at the present day, and that it would be a wholesome sign if the market felt it had a glut of it, is liable to be met by triumphantly pointing to the progress of science and invention. The progress in these is, beyond all doubt, the most striking characteristic of the time we live in. They flourish luxuriantly, and the devotees of science, on which invention depends, are far more numerous than ever before. Yet they form but a very small section of society. The characteristic of scientific inventions is that they place their advantages at the disposal of those who do not understand them. It is one thing to understand the telegraph, and quite

another to hear the news brought by telegram from all parts of the world ; one thing to understand dyeing, spinning, and weaving, and another to have a coat on your back ; it is one thing to be the inventor of a steam engine, and another to sit in a railway carriage. So then, while it is an age in which society is urged into new conditions by invention, that only amounts to invention being the source of that complication of society which we have been considering, but is no evidence of accurate thought among the multitudes of which society is composed. Inventions of all sorts, medical inventions among others, are things for which there is a ready market, and their marketability is the gauge of their success. So also in experimental and other physical science the observations themselves are so much advance, capable of verification, and when verified forming part of our stock of fact ; generalisations formed by immediate induction from these stand next in order of easy verification, while every step that is taken further from the mere record of individual phenomena brought before the senses carries us further into regions in which higher mental qualities and more extended data are required to attain to accuracy and also to appreciate it. The more nearly science approaches to philosophy the more difficult are its conclusions to verify, the less marketable often do they become, and the more numerous the possible errors of speculation.

On the whole, then, the activities of the age do not make it necessarily a philosophic age. They tend to float an enormous amount of crudity and hallucination on all matters not capable of being subjected to exact observation. Yet as the outcome of earnest inquiry, from all the crudities and absurdities there grows continuously a gain to human wisdom. Crudity and absurdity must have their day ; but each must yield in turn to truth as long as there is earnestness in seeking it, and as long as society succumbs not as former civilisations have done to sensuality.

In the machinery of such a Society as this you have an instrument capable of helping you in the search of truth or of fostering folly, according as you allow yourselves to be guided by due earnestness, or become infected with the spirit of charlatanry ; but I trust that there is earnestness enough among you to secure the right result, and hopefulness enough to make you determined to secure it, instead of letting the Society drift as a useless thing, while you give yourselves over to despair. It all depends on the spirit which you bring to your discussions. If a sufficient number of you determine to

work together so as to make the discussions really valuable, in exciting new ideas, and in testing the new ideas that your neighbours bring, you will raise the whole tone of medical education, first in this school, and afterwards in the country. But if you are satisfied to come unprepared, to talk on the spur of the moment, with just so much appearance of thought as you may fancy will pass muster, and if you let such attempts pass in your neighbours without due intellectual chastisement, not the Society only, but yourselves will deteriorate.

In your professional studies, apart from the manipulative skill required in the arts of medicine and surgery, you have to do with sciences in which both observation and theory have their places; and in your discussions in this Society, as well as indeed in your whole habits of thought, you will do well to keep these two orders of idea, if not entirely separate—and that is difficult to manage—at least as distinct as possible. You do not come here to practise that style of argument *ad captandum vulgus*, the origin and necessary character of which, I have tried to explain; you come to learn expertness, not in appealing to prejudice, not in catching a foolish laugh from a more foolish audience, nor yet in wheedling a jury and making the worse appear the better part; but expertness in catching the true issues in scientific disputes, and in detecting fallacious argument. You come to extend your interest in professional matters by listening each one to topics which another has paid special attention to, and asking pertinent questions which shall lay bare wherein his inquiries have been defective, and so accustom all to the requisites for completeness of investigation. With these objects in view it is specially necessary, I say, to distinguish observation from theory. There is a place for each; and accuracy in each is secured by different means. As regards observations, when they are recorded by others they require to be subjected to stringent criticism. All imaginable sources of possible fallacy have to be considered, and when apparently contradictory observations have been made by different persons, the means of reconciling them, or, if that be impossible, the superior probabilities in favour of one over another have to be gone into. When you make them yourselves, it is impossible to take too much care in using every precaution to ensure scrupulous accuracy; and in this, experience alone can give dexterity.

But the passage from observations to the conclusions drawn from them is so subtle that it may be questioned if it can be done justice to by any one who has not given special attention

to the distinction between sensation, perception, and judgment. I perceive that a visual sensation consists of certain dispositions of light, shade, and colour. I form a judgment as to whether these result from a concavity or convexity, or some other cause; but the whole operation takes place so quickly, without itself being the subject of remark, that we fail to appreciate the stages involved, and are liable to mistakes in consequence. To any of you who may have tried to sketch from nature, the most striking illustration of this is to be got from the view at any time before the eye. Looking at the same objects at different distances you imagine you see them in their proper colour, and you can tell at once what that colour is, yet in point of fact they are not similar rays of light which reach the eye at different distances, nor similar sensations that reach the consciousness. The sycamore a good way off appears to be exactly of the same shade as the sycamore near at hand, and the beginner is liable with the brush to represent them so; while in fact the rays of light reaching the eye, and correctly translated as a couple of identically coloured trees, are two groups very different one from the other, and a considerable portion of the difficulty of the painter's art consists in learning to appreciate what are the colours and shades which actually do reach his eyes, as distinguished from the code of translations with which his mind has been flooded from earliest infancy.

In like manner, in every observation, the element of judgment constantly mingles with perception, and it should be the art of the scientific man to keep it in its proper place; and it may be mentioned that in microscopic work this is specially the case. In looking at objects with the naked eye, we are guided, as I have said, by judgments unconsciously formed in infancy from the constant flowing in of phenomena explicable by the same rules; but when we suddenly transfer our vision to highly magnified objects, the conditions are changed and unaccustomed; not only are we transported to a world consisting almost entirely of transparent objects, but the exaggerated size is liable to give false notions as to density, movement is exaggerated *pari passu* with diameter, and focus instead of being unconsciously humoured has to be adjusted by movements of the fingers.

When an observation is completed and well guarded, then, in greater or less degree in different subjects with which you have to do, a theory is deliberately founded thereon, in some instances to become the basis of practice, and in others of a wider and more speculative conception of the operations of

Nature. In theorising, the logical faculties come more to the front, and undoubtedly such a Society as this may be made especially useful as an arena in which theories, sometimes original, sometimes those which are under discussion in the profession, may be brought forward and subjected to careful criticism, so that each member of the Society may go home afterwards with a clearer notion of how far the theory discussed is borne out by the data, and what additional facts are necessary to give stability to a conclusion. Let us look for a moment at the degrees in which theory and observation are mingled in different medical studies. Chemistry is a science in which, since Lavoisier's time, observation and theory have become closely interlaced, every observation being now guided by acknowledged doctrines, themselves long since derived from observation. In the biological sciences the connection between these two things is not always, I think, quite so close. In the study of the natural appearance of objects the unaided isolated observer will probably always be able to make more way than with those phenomena which can only be brought into view by regulated experiment. Yet, after all, it is but small progress that you can make in biological or in any science without using the generalisations of those who have gone before. The mere accumulation of individual observations, together with the acceptance of verified inductions that the phenomena are constant, make no more than the foundation of any science; and immediately above this comes, in Natural History, the grouping of the objects, involving judgment on the comparative importance of different distinctions and resemblances; and the higher we go the more does reason come into play; at the same time that it frequently occurs, and in some subjects more than others, that new views suggest new observations for the purpose of verifying them.

Passing to the subjects more closely directing the practice of your profession, again the observational element is the foundation; and those subjects have this peculiarity, that in them you are too liable to think that observation is everything and to be content therewith, whereas, in reality, it is only by theory that advance can be made. Thus you may be tempted to think that, in the administration of remedies, it is sufficient to know what the effects of each are in different doses; and yet a little consideration will show you that no satisfactory therapeutics can be arrived at without knowing why each drug acts as it does. But we have very sparing information indeed on that subject. We know that certain remedies, in certain quantities, irritate the intestinal surface, setting up

reflex action, by which they are ejected ; that in smaller doses they are taken into the circulation and, according to the dose, or other circumstances, tend to irritate different emunctories, or in other doses affect the nervous system or the general nutrition. We have reason to suspect, and even to know, that certain actions depend on substances entering into combination with the red blood corpuscles, and so altering nutrition. But how little information have we got as to the ultimate reason of the action of any remedy. Much might probably be done by experiments, noting under the microscope the effects of different substances on different kinds of living structural elements, but, as yet, I am not aware that any such experiments have been conducted on a sufficiently wide basis, or with the proper end in view. Very probably it might be found that, just as the different terminal structures in the sense organs are capable of stimulation by different kinds of vibration, so different sets of corpuscles respond to different chemical stimuli. That kind of information we must first get at, and distinguish from chemical alteration of structural elements ; but even when we have got it, we shall probably have to depend on the development of chemical theory for any light as to the cause of such variations in irritability, while the therapist will constantly require to lean on physiological research to explain the changes in the economy which result from interference with the action of different sets of structures. You will observe, then, that in connection with your studies in *materia medica*, which very likely you have thought one of the least scientific parts of the curriculum, there are large fields of virgin soil waiting for active, sanguine, honest-hearted young cultivators.

On turning to the practice of medicine and surgery, it can easily be observed, in like manner, that, however important it may be to hammer and listen to chests, to involve patients and yourselves in a pungent vapour of carbolic spray, and generally to observe as you are taught, treat patients as you have seen others do, and accept the glory of the recoveries, and proclaim the deaths to have been inevitable, it is not by such methods alone that you will reach a worthy success, and advance the progress of our professional knowledge. To catch the spirit of a beneficent reformer is not to do over again exactly what he did or to stick to his opinions, but it is to master what he has done, and then, in like fashion as he did, to doubt and depart from such doctrines as, with your added opportunities, you see are defective, and to imitate the earnest endeavour with which he stretched forward to the things that

were before. This is true in medical studies, as in everything else. The highest progress can only be made by advance in theory; and the advance in theory must be made for its own sake; while the advantage to practice will follow of itself.

In medicine, as in other things, you will find that the characteristic of the age, impressed by the intense struggles for existence, is an immense and continual outflow of crude chatter along with the rarer, severer, and less seductive utterances of wisdom; and you will find that, as in other things, crudity among intelligent men is more abundant in matters pertaining to the theory of the nature and origin of life and disease than in regard to the phenomena of either. In your student days, therefore, while yet the evil has not come upon you of being obliged to act on imperfect information, and while you can afford to fling your whole souls into the search after truth for truth's own sake, do so unreservedly; and let enthusiasm for light be the characteristic governing your dissertations and debates in this Society. Then this Society will become a powerful force for good, not to yourselves only; for the fire will spread from the students of one year to those of the years that come after; and among other collateral satisfactions that you will have, not the least proud will be the sense of increasing the glory of the alma mater.

STATISTICAL REPORT OF 1088 CASES OF EAR
DISEASE TREATED IN THE GLASGOW WESTERN
INFIRMARY, FROM 6TH NOVEMBER 1877, TILL
28TH MAY 1881, WITH OBSERVATIONS.

By THOMAS BARR, M.D.,

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THE department for diseases of the ear in the Western Infirmary was opened for the first time on the 6th November, 1877, and was placed under my superintendence. During the first year it was open to patients only once a week. This was, however, found insufficient, partly in consequence of the large number of patients who presented themselves for

advice, and partly because of the necessity for more frequent interviews with patients in order that the applications, &c., essential in the treatment of ear diseases, should be used with sufficient frequency. After the first year, therefore, attendance was provided twice a week, namely, on Wednesday and Saturday, at 3 P.M., for patients suffering from aural disease.

I may be permitted to mention, for the information of those unacquainted with this department of the Western Infirmary, that the Dispensary for Diseases of the Ear is exceptionally well provided with instruments and apparatus for the proper examination and treatment of patients, as well as with diagrams for the effective teaching of aural surgery to students. In 1878, when I went to Vienna, in order to see the practice of the famous aural surgeons of that city, the directors kindly granted a considerable sum of money to be spent in the purchase of aural instruments and apparatus in Vienna, where, in consequence of its being the great centre of teaching of aural surgery, the cheapest and best instruments are to be had. The greater number of the instruments in the ear department of the Infirmary were provided by the best makers in Vienna, according to a list written for me at that time by Professor Politzer, the recognised head of this branch of the profession.

An important and, I believe, a very essential feature of the aural department is the help which it affords to the visiting physicians and surgeons, when an ear complication exists, or is suspected to exist, in any patient under their care in the wards of the Infirmary. When, for example, deafness, pain in the ear, otorrhoea, or facial paralysis exists, or where giddiness or headache, due to unknown causes, are notable symptoms in any case in the ward, the physician will properly and naturally desire the opinion of a specialist as to the state of the organ of hearing. I am much pleased to say that all the physicians have in this way asked and received my services. In injuries of the head, again, attended by the escape of blood from the ear, the surgeon frequently wishes to know the condition of the tympanum and of the walls of the external auditory canal. It has been my pleasing duty, not unfrequently, to be asked to see and report on such cases. This part of the duties of an aural surgeon, connected with a large general hospital, is most conducive to the advancement of the knowledge of aural pathology, and of the relations of morbid states of the ear to the general system.

Since the opening of this department a very considerable number of students and medical practitioners have attended the clinique, and I am sure they must have profited by the

large number and varied character of the Diseases of the Ear which they had the opportunity of seeing. I should be much pleased to see a still larger number of students giving a share of their attention to this part of the body, so much neglected in the past. In addition to the practical work of the clinique, I commenced a course of systematic instruction last winter, when I gave twenty lectures to a class numbering 15 students. My class this year numbers upwards of 30 students.

My table of cases includes only those presented for treatment at the dispensary department. But serious affections of the ear, such as certain mastoid diseases, are also treated in the wards by the visiting surgeons who often co-operate with me in the treatment of such cases. We hope, by and bye, to have a few beds specially allotted for the accommodation of patients suffering from the more serious forms of ear-disease.

The following tables and summaries have been gathered from notes taken under my own personal supervision according to a scheme used by me at the Western Infirmary, a reduced copy of which I have appended. The results of treatment are not given in these tables. It has not been possible to obtain reliable statistics on the results attained by treating such a large number of dispensary patients whose attendance, in many cases, is irregular and uncertain. In my analysis, however, of the individual diseases, I shall take up the comparative efficacy of different modes of treatment.

My Report includes a total of 1,088 cases of ear disease, of which 668 were in males and 420 in females. The diseases were limited to the right ear in 285 and to the left in 287 ears. Both ears were affected with the same disease in 516 cases, or nearly a half of the whole number of cases.

Synopsis of Cases showing the side affected, the Sex of the Patient, and the percentage of Cases in which the different Sections of the Ear were affected.

External Ear, (Auricle and External Auditory Canal).	{ Right 53, Left 41, Both 59, }	{ Male 96, Female 57, }	Total 153=14 per cent of the whole number of cases.
Middle Ear, (Tympanum, Eustachian Tube, and Mastoid Cells)	{ Right 231, Left 243, Both 413, }	{ Male 537, Female 350, }	Total 887=81½ per cent of the whole number of cases.
Inner Ear, (Vestibule Semicircular Canals and Cochlea, with the Auditory Nerve).	{ Right 1, Left 3, Both 44, }	{ Male 35, Female 13, }	Total 48=4½ per cent of the whole num- ber of cases.

Detailed Report of Cases of Ear Disease classified according to the part of the Ear affected, the Sex of the Patients, and the Side affected.

	Male.	Female.	Right	Left.	Both.	Total Cases
I. EXTERNAL EAR.						
(AURICLE AND EXTERNAL AUDITORY CANAL),						
<i>A. Auricle.</i>						
1. Chronic Eczema Impetiginodes,	2	7	3	4	2	9
2. " " Squamosa, with great thickening,	0	3	1	0	2	3
3. Lupus of Lobule, ... ..	...	1	1	...	...	1
4. Congenital Absence (with absence of ext. aud. canal),	1	...	...	...	1	1
<i>B. External Auditory Canal.</i>						
1. Obstruction with cerumen, epidermic scales, &c.,	58	22	20	15	45	80
2. Otitis Externa Acuta, or acute diffuse inflammation,	12	9	11	8	2	21
3. Otitis Externa Chronica, or chronic diffuse inflammation,	4	2	1	2	3	6
4. Polypi in external auditory canal,	3	...	2	1	...	3
5. Otitis Externa Circumscripta, or boils in the ear,	4	4	4	3	1	8
6. Otomycosis, or fungi in the ear, ... ..	...	1	1	...	...	1
7. Chronic Eczema, with great contraction of canal,	1	4	1	2	2	5
8. Exostosis,	3	...	1	1	1	3
9. Foreign Bodies,	8	4	7	5	...	12
Total for External Ear,	96	57	53	41	59	153
II. MIDDLE EAR.						
(TYMPANUM, EUSTACHIAN TUBE, AND MASTOID CELLS).						
<i>A. Affections of Tympanic Membrane.</i>						
1. Traumatic Rupture of Tympanic Membrane,	4	2	2	4	...	6
2. Acute Inflammation of Tympanic Membrane, or acute myringitis,	3	...	1	1	1	3
<i>B. Affections of Middle Ear not attended by Perforation of the Tympanic Membrane.</i>						
1. Acute Catarrh (pathological changes, hyperæmia and swelling of the mucous membrane of the whole or only a portion of the middle ear, with mucous or serous exudation, and some admixture of pus cells),...	46	30	18	20	41	76
Carry forward,	53	32	21	25	42	85

	Male.	Fe- male.	Right	Left.	Both.	Total Cases
II. MIDDLE EAR—Continued.						
Brought forward,	53	32	21	25	42	85
2. Subacute Catarrh (the same pathological changes as in the acute form, but of longer duration and with less painful symptoms, seldom purulent admixture in exudation),	31	18	11	8	30	49
3. Chronic Dry Catarrh (varied pathological changes, such as, thickened and dry mucous membrane, inspissated secretion, adhesions, false bands, rigidity of chain of bones, indrawn, thickened, or atrophied tympanic membrane, &c.,) ...	178	113	34	57	200	291
<i>c. Affections of Middle Ear attended by Perforation of the Tympanic Membrane.</i>						
1. Acute Purulent Inflammation, or Otitis Media Acuta (more intense inflammation and swelling of the mucous membrane of the middle ear than in the acute catarrh; the exudation, muco-purulent, or purulent and spontaneous perforation of the tympanic membrane),	34	17	22	21	8	51
2. Chronic Purulent Inflammation, or Otitis Media Chronica. This disease, with its consequences, forms the large class of "running ears" or otorrhœas. Pathological changes:—Chronic inflammation and swelling of the mucous membrane of the middle ear, with more or less destruction of tympanic membrane; in advanced stage there are thickenings, adhesions, &c.	142	105	83	70	94	247
3. Consequences and Complications of Chronic Purulent Inflammation:—						
<i>a. Affecting Tympanum.</i>						
1. Polypi growing from one or other of the walls of the tympanum,	37	28	30	26	9	65
2. Granulations springing from the mucous membrane of tympanum,	9	4	4	6	3	13
3. Secreting process ended, leaving behind partial destruction of membrane, cicatrices, adhesions, thickenings, &c., producing deafness, and often "tinnitus aurium,"	25	22	10	10	27	47
4. Caries of walls of tympanum,	1	3	3	1	...	4
<i>b. Affecting Mastoid Region.</i>						
1. Acute periostitis over mastoid process, ...	4	...	2	2	...	4
2. Acute purulent collection in the mastoid cells,	2	2	3	1	...	4
Carry forward,	516	344	223	227	413	860

	Male.	Female.	Right	Left	Both	Total Cases
II. MIDDLE EAR.—Continued						
Brought forward,	516	344	223	227	413	860
3. Chronic purulent collection in mastoid cells, with fistular orifices in the cortical part of the mastoid process,	6	4	4	6	...	10
4. Necrosis,	3	...	2	1	...	3
5. Osseous cicatrices over mastoid process,	2	...	1	1	...	2
<i>c. Affecting Parts adjacent to the Ear.</i>						
1. Facial paralysis,	5	2	3	4	...	7
2. Interior of cranium; death from meningitis; no post-mortem,	2	...	...	2	...	2
<i>D. Non-inflammatory Affections of Middle Ear.</i>						
a. Otalgia or pain in the ear, without any appearance of pathological change. (Supposed neuralgia of tympanic phocus), ...	3	...	1	2	...	3
Total of Middle Ear,	537	350	213	243	413	887
III. INNER EAR AND AUDITORY NERVE.						
1. Disease of labyrinth of unknown nature, ...	8	5	...	1	12	13
2. Disease of labyrinth, clearly of syphilitic origin,	4	...	...	...	4	4
3. Disease of labyrinth, the result of injuries,	4	...	...	...	4	4
4. Disease of labyrinth, presenting Ménière's group of symptoms,	4	4	1	2	5	8
5. Cinchonism,	1	1	...	...	1	1
6. Tinnitus aurium, without defect of hearing,	1	1	...	...	2	2
7. Congenital deafness with dumbness, ...	9	3	...	...	12	12
8. Dumbness from deafness occasioned by disease after birth,	4	...	...	...	4	4
Total of Inner Ear,	35	13	1	3	44	48

Scheme showing the relative frequency of the Diseases at the different ages of life.

Under 2 years,	17
From 2 till 10 years,	168
" 10 till 20 "	278
" 20 till 30 "	230
" 30 till 40 "	142
" 40 till 50 "	94
" 50 till 60 "	101
" 60 till 70 "	42
Above 70 years,	16
Total,	1,088

OBSERVATIONS.

These 1,088 separate diseases of the ear were exhibited in 1,000 patients, as in 88 persons, a different and well marked disease existed in each ear. This is shown in the following table :—

Chronic dry catarrh in the one ear and—	
1. Chronic purulent inflammation in the other,	43
2. Excess of cerumen in the other,	10
3. Acute catarrh in the other,	8
4. Acute purulent inflammation in the other,	4
5. Subacute catarrh in the other,	4
Chronic purulent inflammation in the one ear and—	
6. Impacted cerumen in the other,	8
7. Subacute catarrh in the other,	7
8. Acute purulent inflammation in the other,	4
Total,	88

These 88 are recorded in the case book as instances in which combinations of well marked diseases existed in the same person. But the cases are much more numerous where, in a slighter degree, probably unnoticed to the patient, two different ear diseases co-existed in the one person. For example, impacted cerumen in the one ear very often co-exists with some degree of chronic dry catarrh not only in the same ear but in the other. In like manner acute catarrh of one ear much more frequently occurs in persons with some chronic catarrh of the same or of the other ear than the table indicates. We may say, indeed, that *if one ear is affected with a chronic disease it is comparatively rare to find the other ear perfectly normal in structure and function.*

It will be observed also, as a notable fact, from the total summary of cases, that in 516 persons the *same* disease existed in both ears. The thousand patients, therefore, presented at least a total number of 1,604 diseased ears which were examined and more or less regularly treated.

I have, unfortunately, not been able to gather the proportion of cases in which pathological conditions existed in the nasal and pharyngeal spaces. It is now recognised as one of the well established points of aural pathology, that this region is not only frequently the place of origin of ear diseases, but that its morbid conditions have a most important influence on the course and issue of affections of the middle ear. In a very large proportion of my cases, there was congestion, swelling, thickening, or hypertrophy of the whole or part of the naso-pharyngeal mucous membrane. Indeed, in our modes of examination and in our methods of treatment, attention to the

naso-pharyngeal cavity was always looked upon as only of secondary importance to the ear itself.

In the ear diseases of childhood and adolescence (463 of my cases, or 42½ per cent of the whole, were in persons under 20 years of age), these naso-pharyngeal affections were found to play a specially large and important part in the etiology and course of ear diseases. This is due to the special tendency, at that period of life, to hypertrophy and outgrowths of the glandular tissue in the upper pharyngeal cavity, constituting, in its more pronounced form, the so-called adenoid vegetations in the roof of the pharynx. In the acute and subacute catarrhs and inflammations of the middle ear in childhood, with their great tendency to relapses, the real *fons et origo* of the mischief is frequently in this space. Generally in such cases I explore the upper pharyngeal cavity with the index finger introduced through the mouth, and in a very large proportion I find an exuberant growth or hypertrophy of the adenoid tissue, or pharyngeal tonsil of Luschka. These growths appear in the forms of either tongue-shaped, or globular, or flat excrescences, chiefly on the posterior superior wall, from which, however, they not unfrequently extend to the posterior nares, when they interfere with the due permeability of the nasal passages. The result of this interference is shown in the habitually open mouth, abolished nasal breathing, and sunken *alæ nasi*. The successful treatment of these adenoid growths had a most beneficial influence upon the ear, as well as upon the general health.

The large number of diseases of the middle ear (887), and the proportionately small number of diseases of the inner ear (48) is worthy of notice, and may have excited the surprise of the reader. From the latter category, I have excluded all but what I considered *primary* disease of the nervous apparatus of hearing. Undoubtedly, with the advance in the knowledge of the pathological anatomy of the ear and the improvements in the objective mode of examination, cases of so-called nervous deafness have become much fewer. Nervous deafness has been defined as that in which the patient hears nothing and the doctor sees nothing. But it would be wrong to assume that because no change is to be seen in the tympanic membrane and no abnormal state of the Eustachian tube is discovered, the nervous apparatus is the sole or primary seat of disease. Important changes may, for example, exist in the fenestral membranes or in the recesses leading thereto, which cannot be recognised either by ocular inspection or by any other mode of examination. It is now well known that

when diseases, such as chronic dry catarrh, or chronic purulent inflammation, have existed for a length of time in the middle ear, the structures of the labyrinth become at length involved, and we have what is termed secondary disease of the labyrinth. It is, therefore, probable that in many of the cases tabulated under the head of chronic dry catarrh, 291 in number, and of chronic purulent inflammation with its consequences, 408 in number, the pathological process had invaded the interior of the labyrinth. This adds another to the many reasons why disease of the middle ear should be promptly and effectively treated. Even the group of symptoms included in the term Ménière's disease, namely, deafness, tinnitus, giddiness, and nausea, may be called forth by diseased processes in the middle ear, especially by such processes as would lead to undue pressure upon the fluid of the labyrinth from the tympanic side. If a person, however, with normal hearing, become affected suddenly with marked deafness, great noises in the ear, and perhaps also with giddiness and nausea (symptoms most frequently associated with constitutional syphilis, mumps, or traumatic injury), and, on examining the ear soon after, no evidence of disease be found in the external or middle ear, and if, at the same time, the osseous conduction of sound is markedly impaired, there is clear evidence of a primary pathological condition in the labyrinth or auditory nerve.

The cases in which the inner ear becomes gradually involved, on the other hand, are generally the result of the extension to the structures of the labyrinth of disease which has begun in the middle ear.*

I intend, in future papers, to describe the chief methods of treatment which I have carried out in these 1,088 cases of ear disease, with the results so far as these could be ascertained. On the subject of treatment, I shall confine myself at present to my experience, as gained by the treatment of these cases, of the value of paracentesis of the tympanic membrane, an old operation which has of late years been revived, and the value of which has been much discussed by aural surgeons.

I have practised incision of the membrane in two classes of my cases; first, when there was purulent, mucous, or serous exudation in the cavity of the tympanum, or in the interstices of the layers of the tympanic membrane; and

* See paper by author on "Value of the tuning fork in the diagnosis of disease of the auditory nerve."—*The Glasgow Medical Journal*, October, 1879.

secondly, when there was no fluid exudation in the tympanum—the condition being that designated in my table as chronic dry catarrh.

I have found the operation of greatest value in the *first* class of cases. In purulent collections in the middle ear, the incision of the membrane decidedly alleviated the pain, and shortened the evil effects of pressure upon the ossicular chain and the walls of the middle ear. It probably also obviated such a loss of the substance of the membrane as would have taken place had we waited for spontaneous rupture. In these ways the operation tended, it is hoped, to preserve the future integrity of the organ. In some cases I have increased an already existing small opening, or made a fresh opening in a better situation, with very advantageous results. I have not seen a discharge from the ear continue for any length of time after incision in this way. The operation was of especial value in those cases of purulent collection in the middle ear where the membrane was thickened and more unyielding in consequence of previous disease, and where, therefore, the process of spontaneous rupture was rendered more difficult. In such cases, timely incision of the membrane might prevent, we may reasonably suppose, the extension of the disease to the labyrinth or to the meninges. It is to be noted that when the membrane has become thickened, its rigidity and opacity may obscure very much the signs of purulent collection usually exhibited by the membrane. If great pain exist in the ear, and if there be marked tenderness over the mastoid process, with shooting pains over the side of the head, and decided impairment of hearing, an exploring opening should be made in the membrane, even although no bulging or characteristic change of appearance point out the existence of matter behind it.

With respect to mucous and serous exudation in the middle ear, I have practised incision of the membrane in a considerable number of such cases. Where the quantity of secretion was such as to produce a very distinct saccular bulging, often of a yellowish colour, at the posterior part of the membrane, as we sometimes see in children who have subacute catarrh of the middle ear, I have incised usually at once. In such a case the operation is generally free from pain. When, on the other hand, the quantity was not sufficient to cause a marked bulging of the membrane, and when the Eustachian tube was freely permeable, my practice has been to employ inflation, effective treatment of the naso-pharyngeal mucous membrane, general treatment, &c., and this was frequently sufficient.

Most patients have a strong aversion to the operation, and it is as well to avoid it if other treatment will suffice.

If, after a short trial of the treatment just mentioned, improvement was not evident, in consequence probably of the exudation being of a thick, viscid character, and the Eustachian tube being difficult to inflate thoroughly, incision was then resorted to, and the viscid mucus forced out through the opening by means of the air douche; in some cases the aid of forceps was required to ensure the evacuation of the strings of mucus. I believe that in such cases the timely incision may prevent those important and permanent structural changes in the tympanum which form a considerable proportion of that large class of diseases included under the head of chronic dry catarrh of the middle ear. This class of cases, as will be observed from my summary, numbers 291, or about 27 per cent of the total, and presents the most intractable form of ear disease which comes under the notice of the surgeon.

It is well, however, to keep in mind that, as in all other catarrhal affections, exudative catarrhs of the middle ear are not to be dealt with by exclusively local treatment. We may remove the exudation by incising the tympanic membrane, or by frequent use of the air douche, but the tendency to the catarrhal process in the middle ear may continue, with consequent recurrences of the mucous or serous exudation. Hence, general tonic or alterative treatment is often of great importance in fluid exudation into the middle ear, especially when that is of a recurrent character. Lately, a patient came under my notice, whose tympanic membrane had been incised several times, with distinct but transient benefit. The deafness always recurred, and he gave up purely aural treatment, until after the lapse of some time he was advised by a physician, who was not an aural specialist, to try the use of a tonic, composed of strychnia, quinine, and iron, three times a day. To the patient's surprise, after the use of this medicine for a short time, the hearing gradually improved, and ultimately it seemed to be permanently improved, if not completely restored. I mention this instance simply to emphasize what I have pointed out, that it is not always wise to trust to purely surgical and local treatment in such cases.

The *second* class of cases in which I practised incision of the membrane were those of chronic dry catarrh, with no fluid exudation, and where tinnitus aurium was a marked symptom. In some of them, after the incision, I injected alkaline solutions through the Eustachian tube into the tympanic cavity, with the object of stimulating the mucous membrane.

That the fluid injections did reach the tympanum, I had ocular proof on examining the seat of the incision immediately after the injection. I have also, in some cases, made multiple incisions, especially in the posterior fold of the membrane, in order, by the contraction of the cicatricial tissue, to brace up a too flaccid membrane. Only on one occasion have I divided the tendon of the tensor tympani muscle, in order to relieve most distressing tinnitus in connection with chronic dry catarrh of the middle ear. This was ineffectual in relieving the patient. I may here state that I have never yet succeeded in retaining a permanent opening in the tympanic membrane. This agrees with the recorded experience of most other aural surgeons. On the whole, my experience of cutting operations on the tympanic membrane, *when no fluid secretion exists*, has not convinced me of their great value. They are probably most useful when done to rectify a too flaccid condition of the membrane. In other cases I have sometimes noticed more or less transient improvement in the hearing, or decrease of the tinnitus, but hitherto, in my experience, the operation of incision of the tympanic membrane in chronic dry catarrh has not been at all notably successful.

In a future paper, I hope to give a critical analysis of the largest and most important class of my cases, namely, chronic purulent inflammation of the middle ear, with its consequences, from which we shall be able to deduce important practical, and especially therapeutic, information.

*Scheme in Use in the Western Infirmary for recording the
Cases of Ear Disease.*

AURAL DEPARTMENT.

Diagnosis—R.

L.

No.	Date		
Name	Age	Occupation	Residence
History of Affection			
Tinnitus			
Discharge			
Pain			
General Health			
Family Tendency to Ear Disease			
Giddiness			
Headache			
Articulation			

HEARING DISTANCE.

RIGHT EAR.

LEFT EAR.

Watch
Whispered Voice
"Hörmesser"
Perception by Bones of Head
Tuning Fork
Watch
"Hörmesser"
Patient's Own Voice

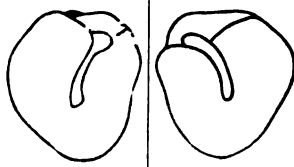
Before Treat- ment.	After Air- Bag.	After Catheter.	Before Treat- ment.	After Air- Bag.	After Catheter

OBJECTIVE EXAMINATION.

RIGHT EAR.

LEFT EAR.

Auricle
Mastoid
Ext: Aud: Canal
TYMPANIC MEMBRANE



Cavity of Tympanum
Eustachian Tube
Nasal Passages
Pharynx

Remarks (Operations—how performed, &c.)

TREATMENT AND COURSE.

DATE.	HEARING DISTANCE.		
	Watch.	Hörmesser.	Whispered Voice.

**CASE OF ANEURISM OF THE ARCH OF THE AORTA,
REMARKABLE FOR THE ALMOST TOTAL ABSENCE
OF DIRECT PHYSICAL SIGNS.**

By SAMUEL SLOAN, M.D., F.F.P.S.G.,

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THE following case of aneurism contains several points of interest, and deserves, I think, to be recorded:—

D. S., æt. 46, foreman printer, had, till recently, enjoyed good health. The family history was good. His habits had always been strictly temperate; he was happily married; and, having a good wage and no children to support, his home life was one of comparative comfort and peace. He occupied a position of trust in the printing department of one of our daily newspaper offices. This did not entail any special physical strain, though its responsibilities at times weighed somewhat heavily upon him.

His recreations were walking and rowing. Of the former he was passionately fond; the average daily distance gone over having been ten miles; whilst this was frequently greatly exceeded. He seemed, indeed, to think little of a walk with a companion, on a Saturday, from Glasgow to Bridge of Allan. About eight years ago he began to take an interest in boat-rowing; and, for several years, rowed in the press regatta, being considered a strong, easy rower. This necessitated about six weeks' preparatory training before each annual race, so that the crew might get into proper condition. After three or four years of this, he determined to give it up; but, when the next regatta came round, he was asked, at a day's notice, to take the place of one of the crew who had become ill. This he did; and, being out of training for a year, he was unprepared for the severe, prolonged strain. Towards the end of the race it was noticed that he suddenly became flurried: his stroke seemed weak and unsteady; whilst he stated afterwards that, at the time this took place, his sight had left him, and he felt as if there had been an increased volume of blood rushing to his head. At the termination of the race his sight returned; but his companions noticed that his face was intensely flushed, and this continued for a long time afterwards. From this date he often said he did not feel "the same man," and he vowed that "he would race no more." He very soon gave up his long walks, staying

in bed till four in the afternoon, instead of, as before, rising at twelve. He frequently now complained of pain in the chest from "indigestion," and suffered from "rheumatic" pains, mostly on the left side, which he would sometimes say he was determined to "work off" by means of exercise.

About the beginning of the present year he began to suffer from paroxysms of distressing cough, which his friends said were most painful to hear. The cough, he thought, had been the result of a cold, and would be likely to pass off when warm weather returned. His cough, and occasional dyspnoea, after any exertion, became rather worse however, and were in no way improved by his holiday of two weeks. No alarming symptom showed itself, however, till the 17th of July. On the afternoon of that day he was quietly walking to his work, when he was suddenly seized with a sense of choking; and he was so breathless that he could only answer the questions of his companion by lifting his hand and placing it on his neck. A similar attack followed on the 25th—eight days after.

On account of my absence from town he was attended by Dr. John Ritchie. Dr. Ritchie examined the chest with great care, and suspected that he had to do with a case of aneurism of the thoracic aorta. Antispasmodics were ordered, and rest in bed enjoined. Under Dr. Ritchie's care the general condition improved, but the other symptoms remained unchanged; another spasmodic attack having occurred about a week after the preceding one.

I saw him in the beginning of August, and on the 9th of that month, at my request, Professor M'Call Anderson visited him with me. At this visit careful notes of the case were taken, and the result of the examination was as follows:—

The breathing is noisy, and sounds as if there was some obstruction about the trachea; the cough is severe and laryngeal; whilst alarming spasmodic attacks of dyspnoea occur on exertion or excitement. The larynx is normal, as proved by the use of the laryngoscope; the pulses—radial and carotid—and pupils are equal, and there is no dysphagia; but the breath sounds are feebler in the left lung than in the right, especially in the infra-clavicular region, in which position percussion is less resonant than on the opposite side. There is a systolic and perhaps a diastolic murmur at the base of the heart; and also, though in a less degree, higher up. The heart is displaced downwards and to the left, the apex beat being in the 6th intercostal space, and a little to the left of the nipple line.

Although there was an almost total absence of direct

physical signs, the signs of pressure and the whole history of the case led Dr. Anderson to conclude that there was a deep seated aneurism of the transverse portion of the arch of the aorta, towards the left side; and he recommended an increase of the dose of bromide of ammonium which I had been giving in 15 grain doses, and which seemed to have been diminishing the cough and dyspnoea. If this failed to control the symptoms 30 grain doses of iodide of potassium were to be given three times a-day, or even oftener. The food was to be moderate in quantity and as solid as could be comfortably taken by the patient. If necessary, morphia was to be administered at night; and, during the spasmodic attacks, 4 drops of nitrite of amyl were to be cautiously inhaled. He was ordered to move as little as possible in bed, and mental quietude was insisted on. Under this treatment, which the patient did his utmost faithfully to carry out, a very decided benefit was for a time observed. The cough became less distressing and the attacks were less severe; so that the iodide was not commenced till about two weeks later, the improvement at this time becoming less marked and the general condition less satisfactory. The nitrite of amyl now ceased to relieve, though pushed to almost a dangerous extent; the frothy sputum became tinged with blood, and, on the 1st of September, in a severe and prolonged attack of breathlessness, he died.

A *post-mortem* was kindly made for me by the late Dr. Foulis on the day after, and the following note was made:—On opening the body and removing the heart, larynx, and lungs together, there is found a greatly dilated condition of the arch of the aorta, the lining of which is studded over with raised, thickened, yellow patches. This dilatation admits four fingers. At the level of the bifurcation of the trachea, there is a small false aneurism, less than the size of a hen's egg, and with an opening in the aorta of a circular shape as large as a shilling. This false aneurism impinges on the trachea at the bifurcation, and also on the left bronchus for about an inch. The external wall of the bronchus forms part of the wall of the aneurism; but there is no rupture of the aneurism into the air-passage. The size and appearance of the dilated arch of the aorta do not render it probable that the recurrent laryngeal nerve can have been interfered with. The larynx and air tubes, although somewhat injected, present nothing remarkable otherwise. The aortic valve segments are slightly thickened and contracted; the mitral valve is normal; and the heart appears slightly enlarged. The lungs are somewhat reddened, but crepitant throughout. The rest of the body was not examined.

Remarks.—This case resembles very closely, in many respects, one which was published by Dr. Anderson in the *Edinburgh Medical Journal* for July, 1881. I think there can be little doubt that it dated from the severe strain at the boat race referred to; and it is probable that rupture of the dilated aorta, resulting in the false aneurism described, was the cause of the first alarming paroxysm. How these alarming fits of dyspnœa, accompanied with a sense of choking, which he always referred to his neck, are to be accounted for, is an interesting question. That pressure on the left recurrent laryngeal nerve—the usual explanation—was here the cause of the dyspnœa, is possible, though this theory is not borne out by the dissection. The dyspnœa was laryngeal, and not of the nature of spasmodic asthma, and *may* have arisen by pressure on the nerves of the trachea, either on those which are derived from the trunk of the pneumo-gastric, or, possibly, on those which come from the left recurrent laryngeal; irritation of either of these sets of nerve filaments, during the occasional increased distension of the sac of the false aneurism, causing, by reflex action, spasm of the motor nerves of the larynx.

ON THE PATHOLOGY OF CEREBRAL HÆMORRHAGE.

By JOSEPH COATS, M.D.

By the term cerebral hæmorrhage is meant bleeding into the substance of the brain. The blood may be large or small in quantity, but it tears for itself a cavity in the brain-substance, and it always implies the rupture of one or more vessels.

In order to understand the various bearings of the subject it is necessary to recall certain of the anatomical relations of the cerebral vessels. The large cerebral arteries communicate freely at the circle of Willis, and here they lie in the soft membranes of the brain covered by the arachnoid. From the circle of Willis the arteries run outwards in the fissures and sulci of the hemispheres, being everywhere invested by loose consecutive tissue.

It is here to be noted that the soft membranes over the surface of the cerebral hemispheres cannot be distinctly

separated into pia mater and arachnoid. On the summits of the convolutions these are firmly united into a single membrane. Between the convolutions they open out, and while one membranous layer passes from summit to summit of the convolutions, another follows the lateral aspects of the convolutions into the sulci, this layer being much looser and less of a membrane than the other. Between these two layers is loose connective tissue forming many irregular spaces, and here the arteries run. These arteries, with those of the circle of Willis, may be called the *larger cerebral arteries*.

From them pass off, mostly at right angles, the *nutrient arteries* of the brain. These are usually of very small size, and if one of the larger arteries be torn out and floated in water, the small nourishing arteries will be seen like fine hairs proceeding from it. Besides these hair-like arteries which proceed from the surface into the brain substance, there is a set of nourishing arteries which pass more directly into the basal ganglia, and are of much larger size. The principal of these proceed from the middle cerebral artery near its origin, and penetrating the anterior perforated space pass to the corpus striatum and neighbouring parts. We shall afterwards find that these arteries play an important part in connection with cerebral hæmorrhage, but meanwhile we may note their larger size and the fact that they come from the middle cerebral near its origin.

Leaving out of sight meanwhile the difference between these two forms of nourishing arteries it will be apparent that the arteries of the brain may be divided into those running in the meninges and those running in the substance of the brain. For the sake of convenience we may call the one the larger and the other the smaller or nutrient arteries.

We shall consider first HÆMORRHAGE FROM THE LARGER CEREBRAL ARTERIES. It may be supposed that rupture of these two sets of arteries will produce different results, inasmuch as the one set run in the meninges and the other in the substance of the brain. As a matter of fact, however, when rupture takes place the blood nearly always finds its way into the brain substance, even when it is one of the larger arteries which is ruptured. When rupture of such an artery occurs the blood tears its way around; it extends into the loose connective tissue, and by and bye reaches the surface of the brain. Here the tissue, being soft, tears readily, and the blood rapidly passes inwards. On the other hand the connective tissue on the surface is tough and the blood will tear it with difficulty.

The blood may work its way from space to space in the connective tissue, but this takes time and probably needs considerable pressure. There is another circumstance which probably has to do with the blood so constantly finding its way into the brain substance. As we shall see afterwards a large number of the cases of hæmorrhage in this situation are from rupture of aneurisms. Now an aneurism will probably project more readily towards the surface of the brain where the substance is soft than in other directions, and when such an aneurism ruptures it may do so directly into the brain. When the hæmorrhage arises by rupture of one of the larger cerebral arteries then, the blood mainly accumulates in the brain substance, and only to a limited extent travels along the soft membranes. It very rarely passes outwards to the surface of the arachnoid so as to accumulate in the cavity of the dura mater.

We have now to inquire *what circumstances induce the rupture of the arteries of the brain*, and here we are still concerned with the larger cerebral arteries. There are two possible methods in which rupture may occur, either the blood in the artery has been at an excessive pressure, or the wall of the artery has been so weakened by disease as to be unable to resist the normal or an increased blood-pressure.

It is hardly conceivable that *increase of the blood-pressure alone can cause rupture of an artery in the meninges*. Cerebral hæmorrhage, as we shall see, is often related to disease of the heart, and it occurs not unfrequently in chronic Bright's disease where there is special hypertrophy of the left ventricle. There can be little doubt that increase of pressure produced by such causes may predispose to or even determine the occurrence of cerebral hæmorrhage; but it can hardly alone produce it. We must have some disease of the arteries causing weakening of their walls.

The walls of the arteries may be weakened in various ways. *Atheroma* does so directly by the changes it effects especially in the middle coat, or indirectly by narrowing the calibre of the arteries, and so causing increase of the blood-pressure on the proximal side of the atheromatous patch. It is doubtful whether atheroma ever of itself leads to hæmorrhage; but when it is combined with hypertrophy of the left ventricle, especially when the blood tension is permanently raised, as in chronic Bright's disease, then it is apt to lead to it. A considerable number of cases of hæmorrhage are due to the association of these two conditions. Syphilitic disease of the arteries stands in a similar relation to hæmorrhage as atheroma does. In fact the two conditions are so similar that it is

difficult in many cases to say which of the two is actually present.

A more frequent cause of hæmorrhage than either of these two is *aneurism of the larger cerebral arteries*. These aneurisms are of frequent occurrence and play a very important part in the production of cerebral hæmorrhage. It may be said here that the cerebral hæmorrhages of old people are mostly from the nutrient arteries, while those of persons under fifty are nearly always from the larger arteries of the surface, and that rupture of aneurisms affords the preponderating number of these latter. The aneurisms are remarkably thin-walled and therefore prone to rupture. Their most frequent seat is the middle cerebral artery and its branches, but they occur in all the larger arteries of the brain. The circumstances of the cerebral arteries render them more liable to dilatation than most others; they are seated in the midst of soft tissue and therefore badly supported; the actual formation of the aneurism is due to some lesion of the wall of the artery—it may be atheroma, which we know to play such an important part in the causation of aneurism elsewhere.

In a considerable proportion of cases the aneurism is due to embolism. Aneurism is associated in a large number of cases with disease of the valves of the heart and the source of the embolism is to be found there. When a piece of calcareous material from a thickened valve or a piece of fibrine from an inflamed valve is carried off it may stick in one of these arteries. If it does not completely obstruct, every successive wave of blood will force it against the wall and so weaken that part of the wall.

The connection of aneurism of these vessels with embolism has been studied from a different side by Ponfick. He examined the vessels carefully in all cases of acute endocarditis occurring in the Charité in Berlin during two years. He found aneurism of the cerebral vessels in about one in ten, and he was able in some cases to observe how the plug was in process of weakening the wall of the vessel by its pressure. There is another set of arteries which are similarly placed to those of the brain, in respect that they are surrounded by soft tissue and imperfectly supported, namely, those of the mesentery. Ponfick found in his cases of acute endocarditis that here also aneurisms were prone to occur in connection with embolism. In regard to these observations of Ponfick it is interesting to observe not only that a considerable number of cases of aneurism of these vessels occur in connec-

tion with valvular disease of the heart, but also that the aneurisms occur much more frequently on the middle cerebral artery than on any other stem. This is in strict conformity with the fact that this is the artery which is most frequently the seat of embolism. These aneurisms taking origin in injury to the coats of the vessel are thin-walled, having almost the character of false aneurisms and so are very liable to rupture. In size they are very various, ranging from the bulk of a grain of wheat up to that of a hen's egg, but generally of dimensions comparable to those of a pea or bean.

Before leaving the subject of aneurism of these larger cerebral arteries it may be noted that hæmorrhage from this cause is of very frequent occurrence. The great majority of cases of cerebral hæmorrhage occurring in comparatively young persons, say before the age of fifty years, are traceable to this cause. We have already seen that the escaping blood finds its way into the brain-substance, and makes a cavity for itself there. It very often tears its way into the lateral ventricle of the same side, and passes across to that of the opposite side and so into the other ventricles of the brain.

Very often there is little blood visible on the surface of the brain, but nearly always there is a little to be seen in the sulci between the convolutions and especially in the fissure of Sylvius. Sometimes the blood is in considerable quantity in the membranes and may even extend along to the base and cover the optic commissure, &c. The presence of even a small quantity of blood in the membranes should raise the suspicion of hæmorrhage from the arteries of the meninges rather than from the nutrient arteries, although the accumulation in the brain-substance may have put the observer off the track.

We have now to consider the subject of HÆMORRHAGE FROM THE NUTRIENT CEREBRAL VESSELS, and it may be remarked in the first place that as these are in the midst of the brain-substance the blood will necessarily accumulate there. These hæmorrhages occur in the great majority of cases in the region of the corpus striatum and in connection with the long vessels already referred to, which pass off from the middle cerebral and penetrate the anterior perforated space. We have to inquire how it is that these vessels are so specially liable to rupture? The answer will be found in studying the conditions which give rise to rupture.

In these vessels as in the others, atheroma when associated with increased force of the heart may give rise to hæmorrhage. But atheroma hardly occurs in the minute nourishing arteries

of the convexity, while it is met with in these larger basal arteries. When due to atheroma therefore, hæmorrhage will be in these vessels, not in the smaller ones.

Again, the nutrient arteries are liable to aneurisms as well as the larger ones. These aneurisms, it appears from the observations of Bouchard and Charcot, occur frequently in large numbers in the same brain, and as they are in small vessels they are of minute size. Such aneurisms have been called *miliary aneurisms*, and they appear to occur in every part of the brain. They are most readily detected on the surface of the convolutions, where, on stripping off the pia mater from the convolutions they may be seen as small red or brown spots. They are also to be found in the deeper parts of the brain and present similar appearances there. Although present in all parts of the brain these aneurisms seldom rupture except in the basal parts and in connection with the long nutrient arteries of these parts.

The explanation of this seems to be that the circumstances of these arteries are such as to make them much more liable to the stress of any increase of the blood-pressure than the others. Tracing the course of the blood to the nutrient arteries of the convexity of the cerebrum, we have first the larger arteries ramifying and anastomosing, and the minute nutrient arteries finally come off from comparatively small stems. By this arrangement the blood-pressure is reduced, and if any temporary excess occurs it can be distributed among a large number of arteries and reduced by their dilatation. The larger basal arteries on the other hand come off from the first part of the middle cerebral, and so are much nearer to the centre of the circulation. Coming off from a large stem and being themselves large as compared with the others, the blood-pressure is more directly transmitted to them. These arteries are also strictly end-arteries, that is, devoid of anastomosis, and, consequently, pressure is less relieved than in the case of the surface arteries. Thus it happens that hæmorrhage takes place from these arteries with much greater frequency than from the other nutrient ones. It will be borne in mind also that when the rupture is due to atheroma it is also these vessels that are concerned.

It may be useful here to refer more particularly to the distribution of the arteries supplying the basal parts of the brain. The anterior cerebral artery supplies a few small branches to the head of the nucleus caudatus and the posterior cerebral sends branches to the posterior parts of the optic thalamus. The middle cerebral artery, however, supplies the most

important branches, which come off in the way already described. There are two sets described by Charcot—an external and internal, and they supply the corpus striatum with the anterior part of the optic thalamus and the corresponding portions of the internal capsule. One of the external branches called the lenticulo-striate, is the artery above all prone to rupture and almost warrants the name hæmorrhagic artery.

The nutrient arteries of the pons and medulla are somewhat similar to those of the convexity of the brain; they are fine branches coming off from the basilar and vertebral arteries. In respect that they come off near the circle of Willis they resemble the arteries of the corpus striatum, and so are more liable to rupture than those of the cortex, although being smaller they are less liable than those of the corpus striatum.

It has been stated above that the miliary aneurisms occur especially in old people, and the cerebral hæmorrhages in such persons are in the great majority of cases due to their rupture. The aneurisms are said to arise by a sclerosis of the arteries, involving first a formation of round cells in the external coat with subsequent fibrous transformation. There results an atrophy of the middle coat which seems to be the most direct occasion of the dilatation. The aneurisms are mostly sacculated and rather thin-walled, but in the earlier stages we may meet with fusiform dilatations.

Besides the causes already mentioned it is to be added that tumours of the brain not infrequently cause hæmorrhage. Embolism also causes hæmorrhage, but not so frequently as we might expect seeing that the nutrient arteries are end-arteries. Inflammation may cause punctuate hæmorrhage. Lastly, hæmorrhage occurs as a result of traumatic injury to the brain. This is very often in the form of laceration, not usually from direct injury by the penetration of foreign bodies or the pushing inwards of broken bones, but rather from the violent propulsions of the soft brain substance against the hard internal surface of the skull. The laceration is very frequently at a part opposite to that at which the force has been directly applied, the soft brain substance being as it were carried forward after the skull has been pulled up by its connections. These lacerations will be of the surface, and the blood will be mixed with broken down brain substance.

We have now to consider the appearances presented by the brain, and the changes which the blood undergoes when the

person survives. The effused blood increases the contents of the skull by so much, and in order to its accommodation there must be some displacement and crushing of the remaining brain substance. If the hæmorrhage be at all extensive we find on opening the skull that the corresponding hemisphere is bulged outwards and perhaps projects beyond the middle line. The convolutions are more or less flattened, and there is a certain dryness and glazing of the surface which indicates that all available fluid has been absorbed to make room for the addition made to the contents of the skull. These are all indications of increased pressure within the skull, and during life this increase of pressure causes symptoms referrible to the brain as a whole or even to parts removed from the seat of hæmorrhage. On exposing the brain substance the appearances will vary to some extent according to the cause and extent of the hæmorrhage. If there are numerous small hæmorrhages closely set, as in inflammation, there will be much softening of the brain, and the brain substance will be mixed with blood. If the hæmorrhage be large the blood will be more pure. In any case the blood produces softening in the parts around and sometimes inflammation. Very often we find a zone of softened brain substance surrounding the clot with numerous red dots representing minute or capillary hæmorrhages.

If the patient die almost immediately the clot is exactly like an ordinary gelatinous coagulum. But if he survive a day or two it has already drawn together somewhat and become firmer and more of a brown colour. This is sometimes peculiarly manifest at the peripheral parts of the clot so that a kind of capsule may be formed of condensed fibrine. The further organisation of the coagulum is a slow process and proceeds very much in the way of organisation of clots inside or outside the vessels. An inflammatory process is set up in the neighbourhood and this results in the production of connective tissue which by and bye encapsules the clot. The clot in the meanwhile softens; its pigment is dissolved out, and frequently deposited in the crystalline or granular form in the softened material or the capsule, often giving the parts a rosy or rusty colour. The blood being frequently mixed with brain substance and both these constituents degenerated, various conditions are presented; sometimes the capsule contains material of an atheromatous appearance.

Through time however the contents tend more and more to absorption, and being replaced by clear fluid a cyst is the result, the so-called *apoplectic cyst*. This cyst is not merely a

simple sac containing fluid, but it is generally intersected by connective tissue trabeculæ so as to appear to be filled with a net-work. Very often some crystalline or granular pigment is to be met with in the wall of the cyst. It is to be remarked that cysts which in their later stages are indistinguishable from these may have their origin in softening of the brain, especially as a result of embolism. It will be seen that the apoplectic cyst may be compared in its origin with a cicatrix; it arises by the formation of connective tissue and fills the place of tissue lost, and it is only because being situated in the midst of the brain substance it cannot contract that we have a cyst rather than a cicatrix. If the hæmorrhage has been near the surface of a ventricle or of the brain itself we may have a cicatrix instead of a cyst; or a cyst by thickening of the trabeculæ and gradual drawing together of the parts may be converted into a cicatrix. In the case of cicatrices occurring thus on the surface of the brain the soft membranes will be depressed and puckered and firmly adherent to the cicatrix. The cicatrices like the cysts often present some remains of blood-colouring matter.

CURRENT TOPICS.

THE MEDICAL SCHOOL OF GLASGOW.—The class lists for the present session being now completed, we have pleasure in announcing that the Medical School is in a more flourishing condition than in any previous year. The number of students enrolled in the several medical schools is 863. If we deduct 63 for students attending science classes without the intention of proceeding to the medical profession, and a few who are entered in more than one school, attending some lectures in one and some in another, it leaves 800 *bona fide* students of medicine in Glasgow this session, a number exceeding that of any former session.

Obituary.

ROBERT PINKERTON, M.B., C.M.

DR. ROBERT PINKERTON, whose untimely death we have to chronicle this month, was born in Largs in 1848, his father being a well known and much esteemed bank agent in that town. At an early age he came to Glasgow, and was for some years a clerk in a leading mercantile house in the city. During this period he found time to attend several classes of the Arts course, and was a prominent member of the chief debating society in the University. In 1872 he relinquished business and commenced the study of medicine, towards which he always had a strong bias. His University career was one of uniform success, and he took the degrees of M.B. and C.M. in July 1876, and during this year he spent six months as house surgeon to Dr. McEwen in the Glasgow Royal Infirmary. He settled down to private practice soon after, but on the outbreak of the Russo-Turkish War, he was elected by Lord Blantyre to proceed to the seat of war as a member of the Red Crescent Society. He acted in this capacity for some months, seeing much service, and penetrating as far as Plevna. Shortly after his return home he read a paper at the Medico-Chirurgical Society, embodying his experiences of the campaign—a paper which was very favourably received by the members of the Society. It was afterwards published in this *Journal*, and incorporated in full in the Stafford House Committee Reports. For his services in the war he received the decoration of the Meiji.

In 1879 he went to New Zealand in charge of the emigrant ship "Marlborough." Last winter he spent on the Nile.

His fatal illness was of very short duration, although there had been indications of abdominal mischief prior to this. On the morning of January 10th he was seized with acute pain in the right iliac fossa, and examination soon detected distinct induration in the vicinity of the caput cæcum. He had much vomiting, and the prostration induced was extreme; and although the irritability of the stomach passed off, and there was nothing like generalised peritonitis, or even much abdominal distension, he sank gradually, and died quietly at 7 P.M. on 14th January.

Dr. Pinkerton was well known and much respected in Glasgow. He brought to his professional work a degree of enthusiasm which, combined with his natural abilities, could

not have failed in the end to conduct him to professional success. He was well versed in general literature, especially to that relating to travel and discovery; and his conversation, largely permeated as it was by what he had himself seen in his wanderings, was interesting in the highest degree. Perhaps his most prominent characteristics were tenacity of purpose and self-reliance, qualities which had stood him in good stead in many trying circumstances, where weaker men would have succumbed.

His loss is deeply lamented by a large circle of intimate friends, and much sympathy is expressed for his mother on the death of her eldest son.

REVIEWS.

Lehrbuch der Physikalischen Untersuchungsmethoden Innerer Krankheiten. VON DR. HERMANN EICHHORST. Braunschweig: Wreden. 1881.

THESE volumes form the second and third of a series of "short medical text-books," being issued by Wreden, of Braunschweig. The first volume contains the methods of examination of the skin, the temperature, the pulse, and the respiratory organs, including the nose and the larynx. In the chapter on the skin the various changes in colour that are met with in disease, and the conditions of œdema and emphysema are detailed. A section is also devoted to the consideration of the changes that occur in the condition of the skin as to moisture; and the causes of general and local sweating are given so far as known. To the cases of unilateral sweating recorded by others, the author adds some observed by himself at Frerichs's clinique, in which unilateral sweating of the face was met with in patients with large, phthisical cavities in their lungs, the side of the face affected corresponding with the diseased lung.

The chapter on the thermometer is full, and is carefully illustrated by charts of the various types of fever and forms of crisis, &c. The excessively high temperatures that have been recorded by Teale and others are looked upon with some suspicion. The importance of the indications obtained from thermometric readings is duly emphasised. That the value of this instrument is getting more generally known among the

laity in Germany seems apparent from the statement, that in many families it is now a household article, and is consulted before the physician is sent for. The pulse, and the various physiological and pathological conditions which influence it, are next treated of. The section on the sphygmograph gives a well condensed survey of what has been done in that direction, but contains no new facts.

The major portion of the first volume is, however, taken up with the examination of the respiratory organs, and it is enriched by the results of careful observations made by the author in the various clinics to which he has been attached. The section on percussion is particularly full. He uses three varieties of percussion-stroke, strong, medium, and light, the latter being employed when an air-filled organ is to be demarcated from a solid one with the utmost accuracy. A strong stroke, on the other hand, is employed when the object is to elicit the clearness of an air filled tissue beneath a solid one lying close to the thoracic walls; the author in this way recognises not only the presence of cavities in the lungs, but also parts of the lung still containing air surrounded by tissue which has become consolidated. Conversely, he holds that a deeply situated infiltrated part of the lung may be recognised by strong percussion over the spongy tissue, and that the deep borders of heart, spleen, and liver may be similarly demarcated, though they are overlapped by the pulmonary tissue. He departs from Skoda's classification of percussion sounds, finding the distinction into "full" and "empty" untenable. His own scheme is based on:—

1. Resonance—depending on the greater or less amplitude of the vibrations.
 - a. clear.
 - b. dull.
2. Varieties of tone or sound—depending on the periodicity of the vibrations.
 - a. tympanitic.
 - b. non-tympanitic.
3. Pitch—depending on the number of vibrations in a given time.
 - a. high.
 - b. low.
4. Timbre (Beiklang.)
 - a. metallic.
 - b. bruit de pot fêlé.

In the topographical percussion of the lungs he gives the results derived from a careful examination of fifty cases. These differ according as the "complementary pleural space," or part of the pleural cavity not filled by lung tissue during quiet respiration, is obliterated or not. The most noteworthy

points in regard to his demarcation of the lungs are those connected with the delimitation of the lower margins during quiet respiration. That of the right side he has found to have the following position:—

In the right sternal (vertical) line, at the upper margin of the sixth costal cartilage.

In the right parasternal line, at the lower margin of the sixth costal cartilage.

In the right mamillary line, at the upper margin of the seventh costal cartilage.

In the right axillary line, at the lower margin of the seventh rib.

In the right scapular line, at the ninth rib.

Near the vertebral column, at the spinous process of the eleventh dorsal vertebra.

On referring to the second volume, it is found that the position of the upper margin of the superficial hepatic dulness, which ought to correspond with the lower margin of the right lung, as obtained by percussion, is given as follows:—

In the right (vertical) sternal line, at the lower margin of the fifth costal cartilage.

In the right parasternal line, at the upper margin of the sixth costal cartilage.

In the right mamillary line, at the lower margin of the sixth rib.

In the right axillary line, at the lower margin of the seventh rib.

In the right scapular line, at the ninth rib.

Near the vertebral column, at the lower margin of the eleventh rib.

These, therefore, do not correspond. Attempts that we have made to confirm the lower margin of the lung, as above given, have failed; and even the position of the upper margin of hepatic dulness, as above described, seems too low. The latter differs considerably from that described by Murchison, who held that the upper margin of hepatic dulness was convex upwards in the lateral region, a fact of diagnostic value in some cases. In the delimitation of the lower border of the left lung, we have also failed to confirm Eichhorst's percussion. He recognises a tongue of pulmonary resonance (*processus lingualis*) interposed between the cardiac dulness and that of the stomach; while our experience is, that the position of the stomach renders it impossible to say exactly where the pulmonary resonance ends, and the tympanitic note of the

stomach begins. Eichhorst's observations, however, correspond closely with those of Gerhardt.*

Râles are treated of much more briefly, and are simply divided into *dry* and *moist*, the subdivisions of the latter being made according to the number, size, regularity, time of occurrence, strength, &c., of the bubbles. The crepitus of pneumonia is, without hesitation, classed among the moist râles. The examination of the sputum, microscopically and otherwise, is fully detailed; and a considerable chapter on laryngoscopy concludes the volume.

In the second volume are found the methods of examination of the circulatory apparatus, and of the abdominal organs. It is here that we chiefly meet with illustrations of his various percussion strokes in their application to the delimitation of the solid organs. For the heart three separate dulnesses are given: small or absolute dulness, made out by a light stroke; large dulness, made out by a strong stroke; and a larger dulness, called the palpation-percussion or resistance dulness, made out by recognising the increased resistance felt to the right of the sternum when percussing with finger upon finger. Such results are possible, however, only if the strong percussion stroke can elicit a deep dulness with accuracy; and as we cannot admit that the laws of physics give good grounds for this belief, we cannot accept the author's conclusions as of practical value. Similar remarks apply to the examination of the liver and spleen.

Following on the examination of the abdominal organs are sections on the various excretions. Those on vomited matters and on fæces are more complete than in any work of equal size with which we are acquainted. The examination of the kidneys, and of the urine, also receives due prominence. The volume concludes with a brief note on the examination of the sexual apparatus, a subject pertaining more to the gynecologist and the surgeon than to the physician. The examination of diseases of the nervous system has been altogether omitted, owing to the intimate relation between electro-diagnosis and electro-therapeutics, and the impossibility of discussing the one without entering on the other.

For this work, as a whole, we have nothing but praise. Every section contains a more or less full account of the present state of our knowledge in regard to the subject of which it treats, and many of them are enriched by the results

* *Lehrbuch der Auscultation und Percussion mit besonderer Berücksichtigung der Inspection, Betastung und Messung der Brust und des Unterleibes zu diagnostischen Zwecken.* Tübingen. 1866.

of Dr. Eichhorst's personal experience. The 174 illustrations add greatly to its value; all of these are beautifully executed, but a few are rather diagrammatic. This text-book will take its place as a standard work on physical diagnosis; and if the other volumes of the series are only nearly equal to it in merit, they will receive a hearty welcome.

A Treatise on Orthopædic Surgery. By J. WARRINGTON HAWARD, F.R.C.S., Surgeon to St. George's Hospital. London: Longmans, Green, & Co. 1881.

THE work before us is not intended as an exhaustive treatise on orthopædics, and its author does not lay claim to any special originality either concerning the views expressed or the treatment advocated. Mr. Haward has written the work partly because he had heard from students that they had a difficulty in obtaining the details concerning orthopædics from their ordinary text books on surgery. These works do not enter sufficiently into detail in their chapters on orthopædics, and as the success of this branch of surgery so largely depends on accurate attention to minutiae, it is as well that the student should have a work embodying these within his reach, especially a work like this one written by a practical surgeon. The work, as a whole, is quite abreast of the time, though there are some peculiarities, as when he states that it is a striking fact that although in London rickets is one of the commonest diseases among the children of the poor; yet in the large manufacturing towns, where children are employed in factories, and thus soon become a source of income rather than expense to their parents, rickets is extremely rare. Glasgow is a large manufacturing town, where children are employed in factories (above the certified age), and yet rickets is quite as common in Glasgow as in London. The same would apply to Manchester or Lyons as it does to Glasgow, yet these are also large manufacturing towns where children are employed in factories. He regards "spinal supports" as inefficient and believes that they interfere with the natural action of the respiratory and other muscles, and with the expansion of the chest, besides giving the child a certain amount of extra weight to carry: objections which apply to plaster of Paris and other jackets. He goes back to the recumbent posture as being absolutely necessary for the remedy of posterior curvature of the spine. If we were inclined to be critical, we would say that Mr. Haward does not enter sufficiently into detail in some

points, especially with that minuteness which a practitioner would like, in order to carry out some of the methods of treatment spoken of. On the other hand, the book is clearly written, the ideas are simply expressed, and in these respects it is admirably suited for students.

The Transactions of the Edinburgh Obstetrical Society during Sessions 1877-78, 1878-79, 1879-80.

THIS volume contains the Transactions of the Society during three sessions, and includes many communications of a most interesting character, not only to specialists in the subject but also to the ordinary practitioner. Want of space prevents us from referring to many articles of great value, but some may be noticed as examples.

There is a paper by Dr. Mundé, of New York, in which he gives the details of twenty-five cases of menorrhagia and metrorrhagia depending on chronic endometritis and adherent placental remains, which were cured simply by the use of Thomas' dull wire curette, followed, in a few cases, by the application of iodine to the interior of the uterus. The instrument and the manner of using it are lucidly described. Then follows a communication, with drawings, from Professor Schroeder, of Berlin, proving that "the difference between the remains of the hymen in females who have not borne children and such as have borne children, is striking to the eye, and that consequently the condition of the vaginal entrance is one of the best means of deciding the question whether a female has already borne children or not." The main point of difference brought out is, that in the nulliparous woman we never find the hymen completely destroyed, but although torn, something in the shape of membrane is always to be made out, while in the parous woman there are no remains of membrane, nothing but the carunculæ myrtiformes.

There is a valuable paper by Dr. Keiller, warning inexperienced gynecologists of the danger of the curette when thoughtlessly used.

Dr. Hamilton, of Falkirk, gives his experience of the frequent use of the forceps in labours where there is the slightest delay in the second stage. He has had 1,371 successive births with only three deaths. Of these, 190 were forceps' cases with two deaths. The author advises the use of the forceps whenever there is evidence of the want of progress,

and in any case, after the lapse of two hours or "less, when the first stage has been protracted or severe."

There are a number of communications, such as those of Drs. Simpson and Hart, which have been published in another form and already noticed by us. Other papers, which will be read with much interest, but of which no short notice can give any just idea, are contributed by Drs. Matthews Duncan, Macdonald, Croom, Underhill, and others.

It seems to us that these published Transactions are of most value to those who are not Fellows of the Society. A busy medical man, who has not time to read special journals and monographs, wishes to know what are the most recent views held by those who are best informed on the subject of, let us say, intra-uterine hydrocephalus or the most modern treatment of fibroids of the uterus, and in this volume and in a few pages he gets all that has come to be known on the subject from the pen of Dr. A. R. Simpson or Dr. Angus Macdonald. If any difficulty suggests itself to his mind while he reads, he will probably find that it has come up and been disposed of at the discussion which followed the reading of the paper, and which he also has here to read and criticise. In this way the general practitioner may keep himself well up in the subject at a comparatively small expenditure of time and money.

We strongly commend this volume to our readers.

Photographic Illustrations of Skin Diseases. Parts V-XII.

By GEORGE HENRY FOX, A.M., M.D. New York: E. B. Treat, 805 Broadway. London: J. & A. Churchill.

THESE parts complete this atlas of skin diseases. In all, there are 48 plates in the atlas, photographed from life, by the method known as the "Autotype" process, and carefully coloured by hand by an artist who has had a medical training under Hebra, in Vienna; it is stated that these pictures will not fade through age or by exposure to light. The artist has made the most of his subjects, and has successfully resisted the temptation to over-colouring. The cases seem to have been carefully selected; they are typical, and include examples of most of the diseases of the skin. The letterpress which accompanies each plate is carefully and clearly written, so that this work forms not only an atlas properly speaking, but also a shorthand book of skin diseases.

Having said so much in favour of Dr. Fox's atlas, we regret to have to record the opinion that while we believe these

plates to be as good as any that can be produced by photography and colouring, they fall short of the degree of excellence we look for in a good atlas of skin diseases. This seems to be the fault of the method of production adopted, however. It appears perfectly evident that photography is not on the whole a process which is well adapted for the representation of skin affections; certainly not so well adapted as chromo-lithography. Many proofs of the accuracy of this view are to be found in the atlas before us. A large number of the plates, moreover, are too small to be of much service; thus, when the whole of the back is represented in a space measuring two inches in length, we need not feel surprised if the details of the eruption (papular eczema, in the instance referred to) are entirely lost. Certain of the plates also show nothing which is characteristic of the affection portrayed; *e. g.*, the plates of superficial epithelioma, ringworm of head and body, lichen ruber, and phtheiriasis capitis. The illustration of scabies is on the whole good, but the acarian burrows are too large, so large that they would prove misleading to any one who might be looking for this, the only thoroughly reliable proof of the presence of the disease in question. The plate of scleroderma, also, shows only a thigh, apparently a female one—nothing more; fully bearing out the assertion of the text, that “the skin itself presents no lesions to the eye.”

On the other hand, and as showing the great inequality of the results here brought together, it must be said that some of the plates are excellent; thus, we do not remember ever having seen palmar eczema, nor varicose veins about the knee, with the resulting eczema farther down, so well figured, and the same may be said of lichen flavus, kerion, molluscum, erythema multiforme, and hydroabullosum, and a few more. The last plate also, representing a most remarkable case of sarcoma pigmentosum, is very good.

On the whole, while this atlas seems scarcely equal to some others which are as easily procurable, it is one which, to many, and especially to teachers, will certainly prove useful; to the practitioner, however, its value is more doubtful.

The Birmingham Medical Review: a Monthly Journal of the Medical Sciences. Vol. XI. No. 41.

WE are glad to notice that this well known journal, “having completed the tenth year of its existence, and being established upon a secure basis,” is to appear no longer as a quarterly but

as a monthly. In taking this step the proprietors of the *Review* are moving in the right direction, the tendency of modern journalism being decidedly towards more rapid publication than is possible through the medium of a quarterly. The enterprise here shown will doubtless have its reward in the increased support of the profession in Birmingham and neighbourhood; it can hardly fail to attract much valuable material, which under former conditions would have been sent elsewhere for publication.

In its new form the *Review* consists of 48 pp., and contains original articles, reviews, reports of cases, proceedings of local societies, &c. This number opens with the first part of a very interesting address by Dr. T. Clifford Allbutt, "On the Surgical Aids to Medicine." Dr. T. Savage writes on "Some of the Applications of Abdominal Section," and Mr. Jordan Lloyd on "A Case of Ligature of the Left Common Carotid for Gunshot Wound." In appearance and general get up the *Review*, as formerly, is all that could be desired. We trust it may enjoy the success it most certainly deserves.

Annals of Chemical Medicine; vol. II. Edited by J. L. W. THUDICHUM, M.D. London: Longmans, Green, & Co. 1881.

THE second volume, like the first, is not only edited, but also written by Dr. Thudichum, and is intended for two classes of readers—the medical practitioner, and the scientific enquirer. It contains twenty-two articles, most of which are too technical to be readily appreciated by those who have not specially studied the subject; others are, however, of a more practical character, and, although stamped by the peculiarities of the author, they are both interesting and instructive. We may direct attention more particularly to Articles viii, xiv, and xxii, in which the following subjects are treated of:—"The Albuminous Substances, Amides, Amido-Acids, and Ammonium Salts, as sources of the Urea formed in the Animal Body;" "The Distinction between Circulating and Organised Albumen, and its importance in the consideration of the Laws of Nutrition of the Animal Body;" and "Diabetic Coma, its Chemical causes and Anatomical conditions."

The subjects discussed in the pages of this book are of the greatest importance, and many of the summaries of the opinions, and of the work done by chemists of note, are interesting and well expressed. We regret that the editor and author should have coined a nomenclature for himself,

as we fear that the average reader will not appreciate such words as "Patholysis," "Zymolysis," and "Hydrothion," even though the last mentioned has been used by such men as Gmelin and Berzelius, in place of the more familiar term Hydro-sulphuric Acid (H_2S). The book is not improved by the article on "Modern Text-Books as Impediments to the Progress of Animal Chemistry"—an extraordinary title for a review, all the space of which is devoted to abusing the Hoppe-Seylerian school in general, and Dr. Gamgee's book on *Physiological Chemistry* in particular, and to praise and glorify Dr. Thudichum, Messrs. Kingzett, Hake, and company.

REPORTS OF HOSPITAL AND PRIVATE PRACTICE.

WESTERN INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. W. G. DUN.

SHORT NOTES FROM PROFESSOR M'CALL ANDERSON'S CLINIQUE.

(These Notes are from remarks made by Dr. Anderson while the patients were under examination by members of his class. This accounts for their fragmentary and rather disconnected nature.—W. G. D.)

HÆMATEMESIS CAUSING ANÆMIA, DROPSY, AND FUNCTIONAL CARDIAC MURMUR.—In the history of the case which has just been read, you will notice there is an account of dropsy coming on three days after the hæmorrhage, this is now almost entirely gone, although previously it was very great. We have to make out the cause of this dropsy. And first I would ask you to observe the appearance of the patient's face. It is a bloated face which has become blanched, and there is an approach also to *acne rosacea*, namely, a dilatation of the capillary blood-vessels, a condition apt to occur in persons getting up in years, but occurring also as a result of intemperance, though more frequently due to debility. As regards the condition of the lungs in this patient, there are symptoms of slight bronchitis, a complaint which is of two years' duration. At the time when the hæmorrhage took place, it is to be noted, however, that the bronchitis was almost gone. The next point is the

history of a rheumatic attack four and twenty years ago. On examining the heart the apex beat is seen and felt under the left nipple, it is therefore displaced upwards and to the left; but no increase in the area of cardiac dulness can be made out. What has caused the displacement? It is not unlikely that it is due to an attack of pericarditis in connection with the rheumatic attack. In this affection the heart is floated up, and adhesions forming, it is unable to resume its normal situation. In the case of the patient at present before us, on applying the stethoscope, you will hear a systolic murmur, soft, blowing, but very distinct, and loudest at the second left intercostal space, but quite distinct in the vessels of the neck. At the right side of the neck there was heard yesterday a distinct venous hum; but this is not constantly present.

In order to make this case clear, we must percuss out the liver and spleen. The hepatic dulness, you see, is normal, measuring 4 inches vertically in the nipple line. The spleen is somewhat enlarged, for instead of measuring $2\frac{1}{2}$ inches vertically, it measures $3\frac{1}{2}$ inches, and yesterday it measured 4.

In making a diagnosis it is most important to make out whether the hæmorrhage which took place before patient's admission was from the stomach or lungs. There are some points in the history of the case which may assist us. The patient had suffered for some time from bronchitis, but at the time the hæmorrhage took place this was unusually slight. The blood, when vomited, was red and not black; but bear in mind that blood, when poured into the stomach in quantity, may be vomited quite red. In hæmoptysis a slight tickling in the throat is sometimes experienced, and the sputa for some time after are stained with blood; in this case no tickling in the throat was felt, and the sputa remained just the same as before the hæmorrhage. This patient has been in the habit of taking, every day, 2 or 3 glasses of whisky at least, he suffered also from occasional bilious attacks, and before the hæmorrhage took place he had a feeling of sickness.

I have come to the conclusion that the case is one of hæmatemesis, and for these reasons: the patient was in the habit of indulging pretty freely in the use of stimulants; he had occasional bilious attacks; there was sickness preceding the hæmorrhage, and there was no blood-stained expectoration. Very likely there is some obstruction to the portal circulation, causing engorgement of the gastric vessels, and leading also to splenic enlargement. The possible existence of ulcer of the stomach has also to be kept in mind. The dropsy and pallor

are due to the anæmia from the hæmorrhage, and the cardiac murmur and the venous hum I also look upon as signs of the same condition.

The treatment I have adopted in this case is light food in frequent meals, so as not to tax the stomach too much at any time. He is also having dialysed iron three times a day, and at bed-time a few drops of tincture of gelsemium are given to prevent cough and ensure rest.

DILATATION OF RIGHT VENTRICLE AND EMPHYSEMA OF LUNGS.
—This is the third time that this man has been a patient in the hospital, and always with the same symptoms. When admitted this time there was well marked œdema of the lower extremities of two months' duration, which, however, disappeared a week after admission. If you examine the neck you will observe there is no fulness of the veins, but when he coughs they swell up. When he was seen first the veins in the neck were not only distended but also pulsated. This condition points to tricuspid regurgitation. There is now no cardiac murmur; but when admitted a systolic murmur was heard at the lower part of the sternum. With the disappearance of the murmur, the œdema of the extremities and the pulsation of the veins of the neck have also disappeared, showing the relation of these symptoms to the cardiac lesion. There is still slight increase of the cardiac dulness to the right, but not so great as formerly, and epigastric pulsation is not now observable. What has given rise to this state of the heart? Speaking generally, we may say it is due to obstruction in the pulmonary circuit. We shall not, however, examine the lungs first, but shall see whether any light can be thrown upon their state from the examination of the liver. The area of hepatic dulness, as defined by percussion, is diminished, measuring in the nipple line only 3 inches, and there is also apparently some depression of the liver, the upper border being too low, and the lower border projecting slightly below the edge of the ribs. This is probably due to emphysema of the lungs, a condition which would also explain the dilatation of the right ventricle. What signs of emphysema have we in this case? The chest is slightly barrel-shaped; the percussion is tympanitic; the breathing is loud and harsh, and the expiratory murmur prolonged. This statement with regard to the respiratory murmur is not in accordance with that made in most books, in which the breathing is usually said to be feeble. The feebleness of the respiratory murmur often observed in cases of emphysema is not, however, due to the emphysema, but is caused by

bronchitis, so often present in cases of emphysema. Where bronchitis is not present the respiratory murmur, I repeat, is loud and harsh, and expiration is prolonged.

The history of the case shows that the patient is subject to bronchitis, which has induced emphysema, and the pulmonary obstruction thus caused has led to the dilatation of the right ventricle. But there is something more to be observed in the chest, for if we examine the bases posteriorly we observe that there is some flattening of the left base, percussion here is dull, and a moist râle is to be heard. There is no history of pleurisy, and the probability is that there is some fibroid degeneration of the base of the right lung.

The diagnosis, then, in this case is dilatation of the right ventricle, produced by bronchitis and emphysema, and aggravated by condensation of base of left lung.

This man's case shows us the danger of neglected bronchitis. Should you be consulted by any one who suffers from repeated slight attacks of bronchitis brought on by cold, warn him against neglecting such attacks, as he thereby runs the risk of laying the foundation of a state of matters such as we have in our patient.

The treatment up till now has been simply rest in bed and 20 drops of tincture of gelsemium at bed-time. In order to increase the tone of the heart we shall now order tincture of *casca* (10 p.c. solution) in doses of 5 to 10 min. three times a-day. Had he been a wealthy man, with plenty of leisure, it would have been proper to recommend a change of climate, such as a voyage to the Mediterranean or a short residence in Egypt.

CASE OF PEMPHIGUS IN A BOY.—It is too late this morning to enter fully into this case. With the exception, however, of the eruption on the face and on some other parts, the condition of the boy generally is good. The first thing which attracts our attention is the colour of the skin, which is of a dirty, dusky hue. As regards the eruption itself, it is principally observed about the mouth and privates, but scattered patches are seen on other parts of the body. The elementary lesion here is a bulla. The bullæ vary in size, some being as large as a crown piece, others so small as to be almost vesicles. Many of them are filled with clear serum, while others are opaque from an admixture of pus with the serum. Some are flaccid, others tense. I would rather see them filled with serum and tense, than flaccid and containing pus or blood, such a condition being indicative usually of a debilitated con-

stitution. The eruption on the face might readily be mistaken for eczema impetiginodes, the bullæ having ruptured, and the contents having dried up into an eczematous-looking scab. The case, however, is one of true pemphigus, although it might wrongly be taken for pemphigus syphiliticus. The dusky colour of the skin might point in this direction; but in our patient the disease has existed for a long time, and the resulting congestion of the skin has induced an excessive deposit of pigment. I account in this way for the dusky colour you now observe; an additional cause of it also is the fact that he has had a long course of arsenic. The situation of the bullæ assists us in our diagnosis; they are most numerous about the mouth and privates, parts most liable to be attacked by pemphigus, owing to the irritation of the secretions. In syphilitic pemphigus, on the other hand, the eruption is oftenest seen about the hands and feet; it is a very rare disease, and coppery stains are left, which we have not in this case. Pemphigus syphiliticus is not a relapsing disease, whereas pemphigus is markedly so, and this boy has had several attacks.

The treatment which we shall adopt in this case is the subcutaneous administration of arsenic, and the solution which I have found answer best is the liquor sodæ arseniatis, which is much less irritating than Fowler's solution. We shall begin with 5 min., and increase the dose daily by 5 min. till 20 are given; after this the effect will be watched, and the quantity increased to 30 or even 40 min. if necessary. Before making the injection, I would advise you to freeze the skin by applying to it a piece of ice on which some salt has been sprinkled; in this way you can render the injection quite painless.

ERYTHEMA NODOSUM IN A YOUNG WOMAN.—On examination of the arms and legs, slight discoloration of the skin is observed; and on passing the hand over the surface of these parts, a number of small lumps can be felt in the subcutaneous cellular tissue. When these lumps first come out they are rosy red, and painful on pressure, but by degrees they become harder and less prominent, and gradually subside. The pain felt on their appearance is just like that in "a suppuration, which never comes to a head." Sometimes, but rarely, suppuration does take place, and a nasty, strumous-like ulcer forms. There is no particular period of the day when the nodes form; they are associated with pretty high fever, and are usually most abundant on the legs, as is the case in this patient. A certain degree of desquamation takes place, giving the skin a

dry, harsh feeling. The disease tends to die out after a short course, but cases may be prolonged for many weeks by successive attacks, and relapses are most apt to occur in spring. It is supposed to be a manifestation of the rheumatic diathesis. The history of this case seems to point in that direction, but on closer examination we find that there has been really no rheumatism, the pains complained of in the joints being only experienced when an outbreak of the nodes takes place around the joints. There is no affection of the heart, and no history of rheumatism in the family. Whether the disease be rheumatic or not, I am satisfied that it is closely connected with digestive derangements, a statement borne out by this case, for the patient has a weak stomach, and is of a costive habit.

When admitted, she was put upon salicine, but this was soon stopped, and all that is now being done is to regulate the bowels with Hunyadi János mineral water, and to restrict the diet to milk food.

PURPURA RHEUMATICA.—The patient is a young servant girl, aged 15. On exposing the surface, numerous spots are seen on both legs, and to a less extent on the arms. There is no pain or itching, no scaliness of the surface, no elevation of the spots at present, and no disappearance of their colour on pressure; at first, however, there is an inflammatory element combined with the extravasation. Various terms are applied to these spots: if very minute, they are called "stigmata;" when the size of drops of water, "petechiæ;" when in streaks, as if produced by the lash, "vibices;" and if in large patches, "ecchymoses." Before a new crop of the eruption comes out, pain is felt for a few days in the joints. This would seem to indicate some connection with rheumatism, and hence the disease has been called *purpura rheumatica*; and Schönlein has given to it the name *peliosis rheumatica*. I question, however, if the pains are rheumatic; they probably have no more claim to be considered so than have the pains in the joints so often felt at the commencement of many febrile diseases. Occasionally there is œdema of the extremities, and bullæ make their appearance. This form of the affection has been called *purpura pemphigoides*.

It will be interesting to observe the effects of treatment in this case, as the patient has suffered from the disease for eight years. Should an improvement take place, then we may very fairly ascribe it to the remedies employed. What we shall do, is to give 30 min. of liquid extract of ergot every four hours with the view of producing contraction of the small blood-

vessels; and as there is a want of tone in the skin, and probably also in the system generally, we shall try subcutaneous injections of arsenic. The food will be light, and attention will be paid to the state of the bowels.

FROM PROFESSOR GEORGE BUCHANAN'S WARDS.

CASES OF HEAD INJURIES.

FROM NOTES BY DR. DAVIDSON, HOUSE SURGEON.

CASE I. DEPRESSED FRACTURE OF SKULL—TREPHINING—RECOVERY.—D. S., aged 23, a strong muscular man, was admitted on 7th December, having fallen a distance of 35 feet into a ship's hold, and received severe head injury by striking, in his descent, an iron frame.

He was suffering slightly from shock. Pulse 78; rather feeble. Consciousness but little impaired. Pupils normal. His right thigh is badly fractured near centre. On his head is a contused wound 4 inches long, extending from the front of the left parietal eminence to the occiput. Behind, this wound only penetrates to the occipito-frontalis fascia, while in front the bone is quite bare; and just in front of the parietal eminence is a circular depressed portion with well defined edges, and about the size of half-a-crown.

About one hour after admission he was beginning to get slightly drowsy, and, having put him under the influence of ether, Professor Buchanan trephined and removed the whole of the depressed portion, along with three narrow pieces of bone about a half inch long, which had been splintered off the inner table of the depressed part, and driven under the adjoining bone, without the dura mater being in any part injured. The dura mater bulged a little outwards into the opening, and no pulsation was visible. The wound was left unsutured, and cold water dressings ordered to be frequently applied. The leg was put in a box splint. In the evening he became delirious and somewhat unmanageable, tossing off the bed clothes and pulling at the bandages, which he managed more than once to undo, though these were nailed to the splint. 30 grs. potass. bromide and 10 grs. chloral were administered every four hours. Pulse 97, full, and pretty strong. Temperature could not be taken. Retained full control of bladder and rectum.

8th December.—The draught to some degree calmed his excitement; but he is still restless. Wound looks well. Temperature—morning, 98.4° F.; evening, 98° F.

9th December.—Rested fairly well last night; draught not administered—was ordered to be discontinued. Towards night became drowsy. Pulse weak. Small quantity of stimulant administered. Bowels moved by simple enemas. Temperature—morning, 97·8°; evening, 99°.

10th December.—He was much better, and for the first time seemed to realise where he was. Wound looked healthy; little discharge. Temperature—morning, 98°; evening, 100·2°. From this time onward his favourable progress was uninterrupted. Only on one occasion was the temperature above normal—namely, the evening of 12th December.

On the 17th, granulations had appeared on dura mater, and wound was contracting in all parts, save behind the trephined portion, where part of the bone, denuded of its periosteum, will in all probability exfoliate. There was little discharge. Wound now dressed with boracic ointment, and edges approximated by strips of adhesive plaster. There has been no tendency to hernial protrusion.

14th January.—Scalp wound was now filled up level with surrounding tissues. The bare fragment of bone was still firmly adherent. Splint had been removed. Leg in good position, and patient was allowed to sit up. Cerebral functions have been unimpaired by the injury.

CASE II. FRACTURE OF BASE OF SKULL—CROSSED PARALYSIS—RECOVERY.—W. S., aged 45, joiner, was admitted 17th October, 1881, in a state of stupor, having, while at work, been struck on the right side of the face, in front of the tragus of right ear, by a large piece of wood which, by some hitch in the machinery, was launched from a circular saw with a momentum equal to at least 1 cwt. He became insensible at once, and on being lifted up, blood was seen to come from ears and nostrils, while occasionally blood was vomited. Shortly before admission the blood had ceased to come from mouth and nostrils, but still trickled from both ears. His right eye was half opened, and a squint was discernible, but these, it appears, were the sequelæ of a bad attack of measles in his boyhood. Right pupil slightly dilated. Temperature low. Pulse slow and full. He was restless, and gave frequent utterance to inarticulate cries. Ice bags were applied behind the ears.

18th October.—A serous fluid began to trickle from the right ear; blood has ceased coming from both. Urine passed without difficulty. Temperature normal.

19th October.—The serous fluid had now ceased to flow, having continued to do so for nearly 24 hours.

24th October.—Ecchymosis had appeared over cheek, where slight abrasion of the cuticle marks the seat of the primary injury. Conjunctiva showed slight ecchymosis. Where blow was struck the bone was considerably flattened, and was the seat of slight pain.

29th October.—Consciousness had now fully returned, and it was observed for the first time that he had almost complete paralysis of the right side of the face. The muscles of the tongue were unaffected; but those of the palate on the right side were completely paralysed. He felt the tongue as if it were softer and larger than it used to be, and on testing him there was found to be entire loss of taste in anterior two-thirds of the tongue. Tested by electricity, the muscles of the face showed diminished reflex excitability to continuous and interrupted currents. A loudly ticking watch pressed close to ear was not heard. Vision of the right eye had been so much affected, that he was only able to distinguish light from darkness. The functions of the left eye and ear were not in any way impaired. He himself drew attention to the weakness of his left arm and leg, and it was then seen he was hemiplegic, being unable to close the fingers of the left hand, and only capable of performing limited movements with the leg. There were "prinkling" sensations and numbness in the legs from the knees downwards, and in the arms from the wrists to the finger tips. The arm is comparatively weaker than the leg. Speech is drawling and indistinct.

4th November.—Facial paralysis rapidly disappearing; arm and leg much improved. Numbness of extremities less marked. He was now able to sit up, and walked a little about the ward. Appetite poor; food, especially liquids, exhibited a marked tendency to pass into nose when he attempted to swallow.

5th November.—Right ear examined by Dr. Barr at Western Infirmary Dispensary, who reported as follows:—"In this case there has evidently been a rupture of the right tympanic membrane, situated behind the manubrium, but this has now cicatrised. There is almost complete deafness on that side, a loudly ticking watch not being heard even on pressure. The vibrating tuning fork held in contact with the nasal bones is only heard on the left side. This peculiarity, along with the existence of great subjective noises in the right ear, points to the strong probability of a lesion in the labyrinth, or in the stem or root of the auditory nerve."

9th November.—While the paralytic symptoms were still getting less marked vision of the right eye had so much improved as to allow his knowing when the hand was passed before the eyes, and he could now hear the watch when pressed against the ear.

19th November.—He walked to Eye Infirmary where right eye was examined, and showed retinal congestion and slight cupping of the nerve. There were no indications of retinal hæmorrhage, and the congested condition was considered to be due to some pressure on optic nerve or nerve sheath. He could see the figures on a watch dial, but could not identify them. Vision was most distinct at lower and inner side. Pupil slightly contracted and sluggish. Left eye normal. The improvement in his hearing had been such as admitted of his hearing the watch when held two or three inches from ear. Left Infirmary at his own request. Since then he has frequently shown himself, and when last seen—

15th January, 1882.—There was very little change in his symptoms, either for the better or worse. The paralysis of face, arm, and leg has improved but very slightly. The loss of taste and paralysis of palate still apparent. Sight and hearing of right side exactly as on dismissal, and he is still subject to slight giddiness and continual subjective noises in the right ear. The anæsthesia of left foot disappeared on 17th December, when, for the first time he felt as if he had "something firm under him" when he walked. The "prinkling" sensation had, however, extended up from knee to hip joint, and from wrist to elbow.

Remarks.—The history of this case showed there had at least been a fracture of the petrous bone, if not across the base of skull. In favour of this view there were the facts of the profuse hæmorrhage following the injury, succeeded by the escape of cerebro-spinal fluid through a ruptured tympanum. This pointed to the fracture having extended to the meatus auditorius internus rupturing the sheath of the arachnoid and extending outwards in the situation of tympanic membrane. This is substantiated by the facial paralysis being associated with deafness and paralysis of right side of palate and loss of taste in the anterior two-thirds of tongue, indicating that the lesion of the seventh nerve was above the geniculate ganglion and at the root of the auditory nerve. The severity of the injury and the situation of it (posterior part of zygomatic arch) were not overlooked in making the diagnosis. The left hemiplegia was in all probability due to hæmorrhage into the pons,

whether due to an extension of the fracture across the basiphosphoid, or to blood effused round the basal ganglia must of course remain doubtful. The presence of effused blood in the region of the pons was inferred by the rapid improvement in all the paralytic symptoms, and by the quick return of hearing and vision, the loss of which latter was shown by ophthalmoscopic examination to be due to congestion of the retina from intra-cranial pressure.

CASE III. FRACTURE OF BASE AT PETROUS BONE.—T. E., aged 55, fell from the rigging stage of a vessel into the hold—a distance of 16 feet—and was admitted 14th November, 1881, into Ward III two hours after the accident. He was rendered quite unconscious by the fall, but recovered somewhat before admission. Bleeding from both ears, with occasional vomiting of dark fluid blood, occurred immediately after the accident. When seen he was suffering slightly from shock, and blood still continued to come from ear and mouth. His left eyelid was slightly cedematous, and blood was effused over the superior and lateral parts of eyeball as far back as could be seen. Pupils normal. Behind the ear is an incised wound about 1 in. long, which penetrates into the mastoid process so as to admit the probe for $\frac{1}{2}$ inch.

15th November.—At the end of 12 hours blood had ceased to come from the ears, the greater quantity having come from the left. The occasional vomiting of blood continued for 6 hours. He slept fairly well throughout the night, and is quite conscious. Right pupil slightly dilated.

16th November.—Very restless with other symptoms of cerebral irritation. Dr. Barr examined the left ear and found a hardened clot adhering to the upper part of the tympanum, the removal of which was frustrated by patient's irritability. Temperature—morning, 98.6°; evening, 100.2°.

On the 19th the restlessness and irritability had passed away, and temperature was normal. Dr. Barr again examined left ear, which for last day or so had been discharging slight purulent matter, but a swelling on the roof of the canal prevented his having a complete view of the membrane. Right ear normal. A watch pressed against ear and applied to bones of head is not heard on the left side. There is paralysis of left external rectus, with marked diplopia. Vision otherwise perfect. Wound behind ear nearly healed.

14th December.—Left ear again examined and showed a white cicatrised like spot at upper and posterior part of the membrane, which Dr. Barr feels satisfied is the result of a

rupture of the membrane at that part. Is yet very weak and unable to sit up in bed. He has lost flesh considerably.

18th January.—He had been very slowly recovering strength for last few days; had been up, and though weak, was able to walk a short distance. His right pupil still remained slightly dilated. The diplopia still existed, but to a less degree. Hearing not at all improved.

Remarks.—The presence here of a rupture in the tympanum suggests that there has been a fracture of the petrous bone in that situation. The loss of hearing points to a similar lesion affecting the auditory apparatus.

The paralysis of the sixth nerve is to be accounted for either by laceration of its structures, or the presence of effused blood at its origin.

GLASGOW ROYAL INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. WM. MUIR.

FROM MR. CLARK'S WARD'S.

CASE OF EXTENSIVE INJURY TO CHEST WALLS—DEATH.—[Reported by Mr. Young, House Surgeon.] P. L., æt. 25, joiner, admitted 9th December, 1881, suffering from injury to chest walls. While patient was cutting trees, and sitting on nearer or proximal end of the branch he was cutting, the branch broke off and struck his right side in pectoral region, inflicting a large lacerated wound, about 9 inches in length and $\frac{1}{4}$ in breadth, involving both pectorals, and laying bare the ribs. A large semilunar flap, including the nipple, and very much bruised, hung down. The muscles were very much torn and bruised. The fourth rib was fractured and comminuted, and a small portion, about 1 inch long, had to be removed. A small opening led into pleural cavity, and the puncture evidently extended into lung, air being forced into the tissues, which were thus emphysematous. The upper part of chest, neck, chin, and upper lip were bruised and excoriated.

The pleural cavity was injected, through wound, with 1-40 aqueous solution of carbolic acid; the flaps brought up and stitched. A counter opening was made through the large semilunar flaps in axillary line, and the whole dressed with gauze wrung out of 1-20 carbolic acid solution. Evening temperature, 102°. Complains of pain in chest, but has slept a little during day.

10th December.—Slept fairly well. Temperature 100°. Taking beef tea and milk. Face flushed, pulse full and bounding. Wound quite aseptic. Air escaping very freely. Evening temperature 101°·4.

11th December.—Injured side dull on percussion, with evident signs of pneumonia, though no pneumonic sputum. Left side clear percussion. Puerile breathing. Morning temperature, 102°; evening temperature, 103°·8°; pulse 120.

12th December.—Hydro-pneumo-thorax has developed on injured side. Pulse 120, rather softer.

Wound quite aseptic. Morning temperature, 101°·2°; evening temperature, 102°·2°.

14th December.—Patient weaker. Slightly delirious. Wound aseptic. Air entering lung through wound.

16th December.—Patient very sleepless and weak. Some sloughing of the muscles and bruised part of skin. The ends of the fractured ribs have begun to necrose, and the finger may be introduced into pleural cavity, which is filled with products of inflammation.

19th December.—Very much weaker and very delirious. Taking beef tea, brandy and eggs. Passing evacuations in bed. Wound not quite aseptic.

21st December.—Has been highly excited and noisy, and is now very much exhausted. Taking no nourishment, and gradually sinking. Death took place during forenoon.

A *post-mortem* examination showed that the fourth and fifth ribs were fractured. The injured lung is fixed firmly by recent adhesions around the wound. Its tissue is of a dark reddish-brown colour, firm and non-crepitant, and cedematous. Posteriorly, there are some old pleuritic adhesions. Left lung normal. Weight of right lung, 30 oz.; weight of left lung, 22 oz. The other organs are normal, except the kidneys, which are of a firmer consistency than usual. There is thickening and hyperæmia of cortex and medulla. The Malpighian bodies well marked. Blood escapes on section. Capsule easily separated.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1881-82.

MEETING III.—2ND DECEMBER, 1881.

PROFESSOR GEO. BUCHANAN, *President, in the Chair.*

DISCUSSION ON CONTRACTED PELVIS.

THE PRESIDENT, in introducing the discussion, said that it might appear strange that he should introduce this discussion, but the subject was interesting to him from the connection he had had with two cases of Cæsarean section in the Maternity Hospital of Glasgow; and, after the first of these, he had expressed his desire for a public discussion. He was informed that all the information was already got, but he had not got it. He found that there was considerable difference of opinion as to when the mother was so deformed as not to be able to bear a living child.

After his second case he proposed a discussion again, and he thought the best way of opening it was to relate his connection with the two cases. About this time, two years ago, he was asked to assist at a case of a deformed woman, 22 years of age, at the full time of gestation. It had been discovered by Drs. Tannahill and Wilson, as seniors, and Miller and Samuel Sloan, as juniors, that the pelvis was of a certain size ($2\frac{1}{4}$ inches—dry), and when called, he was informed that the physicians had determined that it would be the proper practice to perform the Cæsarean section, provided that he did not object on the ground of ill health or otherwise. All he could do was to say that, if the staff had decided that the operation was to be performed, he was there to do it. The operation was performed under chloroform without difficulty. The child was alive. There was no hæmorrhage, for the uterus contracted well, he drew the edges of the uterine wound together with four thick carbolised stitches, and things went on comfortably. The following day the patient remained well till 2 or 3 in the afternoon, when she suddenly felt pain in the abdomen, collapse supervened immediately, she became pulseless, and died thirty hours after the operation was performed. At the *post-mortem* the abdominal wound was found glued together from end to end,

but the uterus had burst open, so that the ligatures had broken, and peritonitis was set up as in the rupture of an ordinary viscus.

The same condition with regard to the patient happened on the 24th October, 1881, where a married deformed woman, æt. 21, was admitted at the full period. The child was alive, and the staff decided that one of two things was necessary, (1) embryotomy, or (2) the Cæsarean section. There was some difference of opinion. When Dr. Leishman examined the pelvis, he stated that he judged it measured $1\frac{1}{2}$ inch, and it was with difficulty that he got two fingers and the tip of another into the antero-posterior diameter. The question was, is the child to count for anything in the case? In the case of the Cæsarean section, safety to the child was almost secured. The next question was whether it was safer for the woman to do embryotomy or Cæsarean section. The opinions were not equally divided, but there was a large preponderance that Cæsarean section was as safe as the other. It seemed that the practice of embryotomy, in the hands of specialists, had been very unfortunate, and to deliver a full-grown child through a $1\frac{1}{2}$ inch pelvis was to perform an operation almost certainly fatal. There were cases where the operation was begun, and had to be abandoned for the sake of the mother. There was a predominance of opinion in favour of the Cæsarean section, and after some delay the operation was performed by Dr. Buchanan. There was no blood lost; the child was alive, and the placenta delivered immediately. A tube was passed up the vagina. The ligatures were made of strong carbolised silk, and the uterine wound stitched. The abdominal wound was closed by six large stitches. Next morning she was well—at mid-day complained of cramp, and the lower part of the abdominal incision gave way, the wire breaking. Death occurred in thirty-two hours. At the *post-mortem* uterus was found well together, but a small amount of blood had escaped. There was already evidence that a low form of peritonitis had set in.

On these two cases he would introduce the discussion. He would endeavour to confine the discussion to such contraction of the pelvis, that it was impossible to bear a child alive, and second, whether the experience of embryotomy, or similar operation, led to the view that it was preferable to the Cæsarean section.

Dr. W. L. Reid said that in answer to the schedule issued by the Society, only four returns of cases, in which the pelvis was distinctly 2 inches and under, had been received.

A number had been sent where the diameter was considerably over this. The four were as follows, viz. :—

Dr. Pollock—craniotomy—mother died.

Dr. Kirk—under 2 ins.—craniotomy—mother recovered.

Dr. T. Buchanan—craniotomy—mother recovered.

Dr. Cameron—craniotomy twice—third time early labour—mother recovered.

Also a case from Dr. Renfrew, where turning was employed.

Dr. Samuel Sloan spoke as follows : *—“ It would be wise to limit the discussion to these points—(1) Maximum diameter, that will render it impossible for a live child to pass ; (2) Minimum diameter, that through which a mutilated foetus cannot be brought with safety to the mother.

The maximum may be taken as about $2\frac{1}{2}$ inches ; the minimum is a question very much disputed. It is often very difficult, if not impossible, to ascertain the exact diameter.

One explanation of the contradictory statements of authorities is probably this—that it is not stated whether the dry pelvis is meant, or the available space in the living subject. When 2 inches to $2\frac{1}{2}$ inches are spoken of as the limit for embryotomy, surely the dry pelvis must have been meant. I show a pelvis, in which I performed craniotomy, bringing down the base, with vault collapsed, edgewise through the brim, and without much difficulty. In this case the patient had been suffering from pneumonia for 10 days before operation. Here the antero-posterior diameter is $2\frac{1}{2}$ inches, making, after deduction for soft parts, an available space of about $2\frac{1}{8}$ inches. The pelvis from the first case of Cæsarean section is also shown ; in it the diameter is $2\frac{1}{2}$ inches, or, allowing for soft parts, about $1\frac{7}{8}$ inch ; and surely here there might have been brought through a head *crushed* by the cephalotribe when a perforated and collapsed head passed so easily with a conjugate only $\frac{1}{2}$ inch larger. I have never myself performed craniotomy in a pelvis under 2 inches ; but others have, and therefore the operation must be looked on as possible. $1\frac{1}{2}$ to $1\frac{3}{4}$ inch may be considered the limit in the ordinary flat pelvis. Much will depend on the health of the woman, and on the stage of the labour, in calculating the chances by embryotomy ; much also on the skill of the obstetrician in this operation, and on the amount of confidence he may happen to have in the alternative operation of Cæsarean section. Our experience of this alternative in Glasgow has not been a happy one. I know of four cases, and they all proved fatal to the mothers.

A question of some importance in determining the procedure

* MS. furnished by Dr. Sloan.

to be adopted is the relative value of the child's life and the mother's. I should like to hear the opinion of members on that point for my own guidance. Hitherto my view of the matter has been, that we are not justified in risking, to any material extent, the *life* of the mother, in order to increase the child's chances of life, though I do think the mother ought to be willing to risk to some extent her future health, which may, in cases of lesser degrees of contraction, be injured in attempting to save the child. In advocating embryotomy in the last case of Cæsarean section at the Maternity, I felt that, no matter how difficult the operation might be, we were giving the woman a better chance of life, though, had the alternative been Porro's operation, I should have been more ready to yield. The number of women saved in the former operation in this country has been about 18 per cent; in the latter, about 42 per cent of all the women have been saved. As to laparotomy, invented by Dr. Thomas, of New York, though the cases have been too few to enable us to form an estimate of its prospects, I think it greatly to be preferred to the Cæsarean section. In Porro's operation, by the complete removal of the uterus, we have a nearer approach to an ordinary case of ovariectomy; whereas, in Cæsarean section, we are apt to have the lochial discharge finding its way into the peritoneal cavity, and, in all probability, setting up mischief there.

It must be a difficult matter to estimate the rate of mortality from craniotomy in contracted pelvis, as the patient frequently dies, not *from*, but simply *after*, the operation, which has been delayed till other means have failed.

Dr. Macleod said he would not enter on the general question, and he thought that *Dr. Buchanan* had judged wisely in avoiding collateral points. He had had two cases. In the first the mother was dead before he got to the case, and the child was also dead. In the second case, the operation was performed in the Western Infirmary. There were many points to be considered in connection with this operation. He would allude to the relative interests of the child and of the mother. It was not an easy question, and was a very responsible one for the accoucheur. It was looked upon differently here and on the Continent. There the death of the child was considered so terrible that a surgeon who killed a child was looked upon as almost a criminal. They were in the habit of baptising the child, before resorting to any operation which endangered its life. In England the death of the child was not considered to be such a serious matter.

Two-thirds of the mothers had died in Cæsarean section, and two-thirds had lived in embryotomy.

A parallel had been drawn between ovariectomy and the Cæsarean section, but no one, he considered, could really think that the two were in any way analogous.

Ovariectomy was now considered to be one of the simplest operations, but the Cæsarean section was a totally different affair. The opening of the peritoneum was not the danger. In Cæsarean section we have got, through the vagina, a passage for the air, and the exciting causes of septic poisoning. Again, there was the other consideration that the uterus itself often set up hæmorrhage from failing to contract.

The extra-peritoneal operation was not Thomas's but Baudelocque's. If he had to do the operation again he would excise the uterus altogether. He had had to excise the uterus for other causes, and the hæmorrhage could easily be commanded.

He would now give a short account of the case in which he had operated. The patient had been in labour for ten days, and was very exhausted. She was very deformed, the spine and lower limbs partaking in the deformity. After death, the conjugate diameter was found to be about $2\frac{1}{4}$ inches. Dr. Wilson had broken up the head the day before, but this had failed. The child was putrid, the discharge was putrid, but the patient was in fair spirits though weak. No time was lost, and it was about as easy an operation as possible. He washed out the uterine cavity with strong carbolic solution, but he would now prefer to use chloride of zinc. He put no sutures into the uterus, but he quite agreed with Dr. Buchanan in using them. He had regretted since that he did not use them, because the uterus was quite inert. He tried to contract it by ice, but it would not. He did not close the abdominal wall till all bleeding had ceased. Chloroform was said to increase the depression, but he did not believe that it did so. The patient was 30 minutes under operation without any depression. At 7 o'clock at night she was as well as possible, and the same at 10. At 11 she became pale, something gave way, she sank slowly, and died at 12:30. There was no discharge, but he would have been inclined to open up the wound and search for any cause of hæmorrhage. At the *post-mortem* the abdominal wound was found to be all right; that in the uterus was quite open. There was clot in the uterus and in the abdominal cavity. It was then found that there was a wound in the back of the uterus close up to the os.

If a case be seen early he would advise that the exact

measurements should at once be ascertained— $2\frac{1}{2}$ inches being regarded as a safe limit, and if below this then the question of Cæsarean section should be considered. He thought there should be no delay, and if the operation were to be performed, remove the uterus.

Dr. Murdoch Cameron said that the decision was to be based upon the amount of contraction of the pelvis, the size of the head of the foetus, and its reductibility, as also the possible separation of the pelvic symphysis. Three and a-half inches was the smallest diameter at which a hand could pass at the full term; under $3\frac{1}{2}$ art was necessary; and under $2\frac{1}{2}$ craniotomy, embryotomy, &c. Depaul mentions a case where the foetus passed at $2\frac{1}{4}$ inches, Baudelocque one at $1\frac{1}{2}$. From 3 inches to $3\frac{1}{2}$ we require to resort to forceps, turning, or even craniotomy; from $2\frac{1}{2}$ to 3 inches, craniotomy; under $2\frac{1}{2}$, embryotomy or the Cæsarean section. If the conjugate diameter be barely over an inch we can only resort to the Cæsarean section. Symphysiotomy or Stolz's section was performed when diameter was from $2\frac{1}{2}$ to $3\frac{1}{4}$ inches, but had been replaced by perforation. Baudelocque says in 45 cases of symphysiotomy 14 mothers died and only 13 children lived. M. Pajot gives even $1\frac{1}{2}$ inch for embryotomy in preference to the Cæsarean section. Professor C. von Hecker of Munich states that, in the maternity there, there were, from 1859 to 1879, 17,200 cases—7,138 primipara, 10,082 multipara; there were 17,400 children—8,947 male, 8,451 female—a proportion of 105.9 to 100.0. Perforation, &c., were performed in 23 cases = 8.6 per cent—13 of these were primipara and 10 multipara. In 15 of these cases the forceps had been tried, and had failed. Of the children so born 15 were male and 8 female. The mortality of mothers was 13, or 56.5 per cent, and said to be due to long continued labour and previous attempts at delivery. Professor Hecker uses the cephalotribe where the cranioclast does not suffice. The Cæsarean section was undertaken twice. In the second case the conjugate was estimated at $2\frac{2}{16}$ inches, or 5.4 c.m., but at *post-mortem* it was found to be only 5.19 c., or $2\frac{1}{16}$ inches. The uterine wound was not stitched, and death occurred in 47 hours. With regard to the Cæsarean section, we find that G. A. Michaelis gives the death-rate as 54 per cent; Keyser as 79 per cent; whilst the following list shows a remarkable decrease in the death-rate as we come to modern times.

1750-1800	in 117 cases,	80 deaths,	68 per cent.
1801-1832	" 148	94	63 "
1833-1839	" 73	36	49 "

Schröder gives (after Mayer) in 1,695 cases 867 deaths, or 54 per cent. Harris gives 112 cases in the United States, of which 48 recovered, showing a death-rate of 57 per cent.

With regard to the Porro operation, in 44 recorded cases up to 1880, there were 24 deaths, giving the mortality of mothers as 54.5 per cent. With some more recent cases the mortality was 58.8 per cent, so that we have as yet no better result from the Porro operation than from the old one, although the former has the benefit of the antiseptic treatment.

Dr. Werth, in Kiel, reports a very successful case from his clinique. This patient had undergone the Cæsarean section previously, first by Dr. Clausen, in Itzhoe, in 1865, and second by Professor Fitzman, in Kiel, in 1873, and now the Porro operation. In this case the conjugate diameter is only 4 c., or $1\frac{9}{16}$ inches.

Dr. Cameron then reported the case of Mrs. H., æt 44, who began to menstruate at 17, and continued regular till her first pregnancy at the age of 24. First pregnancy—labour began 28th Feb., 1862, ended 5th March, by embryotomy; 2nd pregnancy, 1863, induced premature labour, five days ill, embryotomy; 3rd pregnancy, 1864, full term, embryotomy; 4th pregnancy, 1865, half term, artificial abortion; 5th pregnancy, full term, embryotomy, in Birmingham Lying-in Hospital; 6th pregnancy, 1868, half term, induced abortion; 7th pregnancy, 1870, full term, embryotomy; 8th pregnancy, 24th Nov., 1871, 8th month, induced premature labour, patient removed to Glasgow Maternity, craniotomy by Drs. J. G. Wilson and Tannahill, child removed after 5 hours' effort; 9th pregnancy, 11th Feb., 1873, full term, embryotomy, operation completed in 80 minutes by Dr. Cameron; 10th pregnancy, 9th April, 1874, full term, embryotomy, in 75 minutes, by Dr. Cameron; 11th pregnancy, 26th March, 1875, half term, artificial abortion, by Dr. Cameron, 5 days ill.

Dr. Wm. L. Reid said he had operated six times by craniotomy, but never in any case could he feel sure that the antero-posterior diameter was less than 2 inches. In his six cases one mother had died, but she had been in labour for a considerable time. When performed early, craniotomy was a comparatively safe operation. He strongly recommended the use of an ecraseur, with a wire loop or chain saw for reducing the bulk of the child, as by this means you could go about the operation slowly and gently, and without bruising the mother much. As to the cases suitable for craniotomy, he believed that where it was performed early and slowly a very small conjugate diameter indeed was safe for its performance. Dr.

C. Braun has given no exact diameters, but Dr. Barnes says that it may be safely performed with the ecraseur in cases where the diameter is $1\frac{1}{2}$ or 2 inches or even only 1 inch. The diameter through which a living child can pass depends as much on the child as on the pelvis.

Dr. Gray thought it was important to consider the time when the operation should be performed—whether or not when the labour had commenced, or immediately after the discovery of the abnormal state. After labour was on, and the whole blood, as it were, boiling, a scratch might induce septic poisoning. There was another important question—a medico-legal one. It was whether or not we were justified in bringing on miscarriage in such cases. He thought that in such cases abortion might be induced about the sixth month. He would remove the whole uterus. He had never seen a death from craniotomy.

Dr. Scott Orr had only had one case of craniotomy in private practice, but he could not be sure as to the exact diameter of the pelvis. After the forceps had failed, with the assistance of *Dr. Mackay*, of Greenock, he broke up the head and delivered the woman in two or three hours. After an attack of subacute peritonitis she recovered thoroughly. At the second pregnancy he induced premature labour at the seventh month, and a living child was born. The same was done in the third pregnancy. In the fourth pregnancy labour came on of itself at the seventh month, and she was delivered of twins, both children alive.

Dr. Renfrew gave an account of a case of contracted pelvis where turning was performed, without his being able to effect delivery. In all similar cases he would oppose turning and recommend craniotomy.

Dr. Taylor, of Paisley, had seen craniotomy performed very often in difficult labour.

Dr. Buchanan, in closing the debate, said that he believed far more in a record of individual experience than in a great array of statistics and figures, because people who could not do a thing could learn nothing from them. He thought that the evidence upon the whole was in favour of the Cæsarean section.

MEDICAL ITEMS.

UNDER THE DIRECTION OF
ALEX. NAPIER, M.D.

Transplantation of Bone.—Jakimowitsch (in *Deutsche Zeitsch. f. Ch.* Bd. xv, Hft. 3 & 4) describes a series of 12 experiments on rabbits to test the possibility of wholly separated pieces of bone becoming again united. In 10 experiments the results were successful. Flat or wedge-shaped pieces of bone were removed by the saw or chisel and wholly separated from the soft tissue, and were then replaced either in their former position or turned over so that the surface originally external was towards the medullary canal. The whole operation was performed with strict antiseptic precautions, and the separated fragments were washed in carbolic solution. The periosteum was then brought together with catgut sutures, and the limb wrapped in salicylic lint and fixed in an immovable apparatus. The nature of the resulting union was tested in three ways:—
1. By injection of the blood-vessels; 2. By microscopic examination; and 3. By feeding the animals for some time with madder. The author summarises his results as follows:—

“1. Pieces of bone from the diaphyses of long bones can, even when completely separated from all connections, become again united, when their former relations with the surrounding parts are retained. They again form a living part of the bone from which they were taken.

“2. Pieces of the same bone, also completely separated, may similarly again become united, though they are replaced in their former position, but turned upside down, with their inner surface outwards.

“3. A piece of bone, separated from all its connections and pushed into the medullary cavity of a large long bone, may become organically connected with the inner bony surface and with the callus, which in such cases is formed in the medulla.

“4. A replanted piece of the tibia of a young dog took its part (*funktionirt*) in the vital processes of the bone, especially in the growth in thickness, as was shown by feeding the animal with madder.”

In another series of experiments the fate of bones or fragments of bone after transplantation into soft tissues or on to the surface of other bones was studied. It was found:—

“1. That pieces of long bones transplanted into soft tissue became encapsuled, without any alteration of the bone tissue

being discoverable; they were partly destroyed by advancing vessels with cellular adventitious tissues.

"2. A piece of a phalanx of a rabbit, planted by its articular surface on to the outer surface of the femur of another rabbit, became so firmly attached that it resembled an outgrowth from it.

"3. A portion of the phalanx of a rabbit became partly united to the skull of a dog by new bony tissue, and was partly absorbed." (*Centralbl. f. Chir.* 1881, No. 40.)—D. M'P.

Collyrium for Dissolving Metallic Foreign Bodies from the Cornea.—Dr. Rodriguez reports the following case (*Revista de Ciencias Medicas*, 25th Oct., 1881).—A blacksmith, aged eighteen years, while forging a piece of iron, received in his left eye a small splinter of the metal, which remained there incrustrated, in spite of all attempts to remove it. The following wash was then employed: Rose water, 90 grm.; Iodine, '05 grm.; Iodide of Potass., '05 grm. The result was extremely satisfactory. The particle of metal was transformed into a soluble iodide of iron, and all traces of the foreign body disappeared. The cornea regained its normal condition, and vision remained unaffected.—*Journ. de Méd. de Paris*, 12th Nov., 1881. *Med. News*. 7th Jan., 1882.

Method of Preventing Hæmorrhage in Amputation at Hip Joint.—In the *Archiv für Klinische Chirurgie*, Band 26, Heft 4, Professor Trendelenburg, of Rostock, describes a method of amputation at the hip joint which he has devised with the view of avoiding the risk of severe hæmorrhage, so apt to be experienced in this operation. The principle of this method is the compression of the entire tissues of the flaps before the division of the large vessels, before, indeed, the flaps are cut. In this *Journal* for Oct. 1876, Dr. David Newman gave a description and drawing of a knife which he had devised for amputation at the hip-joint, in which exactly the same principle is applied. Professor Trendelenburg, indeed, seems to have derived his idea from Dr. Newman, for he acknowledges that his operation is similar to that proposed by him. The description of Trendelenburg's operation is as follows:—A steel rod 38 ctm. long, 6 mm. broad, biconvex on section, and 2 mm. thick at the centre, with blunt edges, but provided with a removable lance-shaped point 3 ctm. long, is passed obliquely through the soft parts in front of the joint, in the same way as the two-edged knife in the well known method of Lisfranc, only about 2 ctm. higher. The rod enters

therefore about 4 ctm. below the anterior superior spinous process of the ilium, passes between the femur and the femoral artery, and emerges at the fold of the scrotum. The point is now removed, and an elastic tube or band firmly wound in figure-of-eight fashion round the ends of the rod, and passing in front of the thigh. In this way the great vessels of the thigh, and all the soft parts in front of the joint are compressed. Lisfranc's knife is then introduced 1 to 2 ctm. below the rod, and by cutting from within outwards in the usual way the anterior flap is formed. If an elastic bandage has been previously applied to the limb slight bleeding may take place from the surface of the wound not belonging to the flap, and some small arteries may require to be tied. In the flap the femoral artery and vein and any larger vessels observed are next ligatured, the india-rubber band is then loosed, the rod removed, and the ligaturing of the vessels in the flap completed. Next follows the opening of the joint by an oblique incision, the division of the ligamentum teres and the posterior part of the capsule, in which no hæmorrhage of any account takes place. At most the acetabular artery spouts. The head of the bone having been freed, it is disarticulated, and the steel bar passed obliquely behind it through the soft parts. The direction of the bar is parallel to its former position, the point of entrance lies about 2 ctm. behind that of Lisfranc's knife, and the point of exit is at the tuber ischii. In its passage the rod traverses the opened joint at the lower edge of the acetabulum. By winding the band round both ends of the rod, and across the posterior surface of the thigh, the soft parts situated behind the joint are compressed, the Lisfranc knife is obliquely introduced behind the head of the bone, and the limb completely separated, a small posterior flap being formed. Finally, the gluteal arteries are ligatured, the tube loosed, and the rod removed. Slipping of the rod and tube is impossible, as the rod lies each time in the special canal formed by the puncture.

Trendelenburg has operated in this way in a case of rapidly growing sarcoma of the lower half of the femur in a girl aged 15. The wound suppurated at first pretty profusely, and some portions of tissue sloughed. How far this was the consequence of excessive constriction Trendelenburg cannot say. The wound healed with open treatment and rest. The patient died two months after with pulmonary symptoms, due as was shown on *post-mortem* examination to secondary sarcomatous deposits in the lungs.

[One great advantage of this method is the simplicity of the

instruments used, all that is wanted, in addition to the ordinary amputating knife, being the metal bar with removable point and a piece of elastic tubing, or the ordinary elastic band commonly used as a tourniquet. There is nothing really new in the operation as it is merely an application of acupressure on the large scale, the merit, however, being the recognition of the fact that acupressure can be employed in amputation at the hip.]—W. G. D.

Varieties and Treatment of Whitlow.—Christopher Heath divides this disease into four classes:—

1°. A localised inflammation of the skin of the finger, of an erysipelatous character, and generally due to an animal poison, as from handling "high" game. The erythema spreads up the fingers, without much swelling. It may be checked at once by the application of nitrate of silver solution, 20 gr. to the ounce.

2°. The superficial whitlow, usually about the nail, and due to irritation, as of black lead on a housemaid's hands. Pus rapidly forms, and should be evacuated by incising the cuticle. If the pus forms beneath the nail, pare down the nail with a sharp knife to let the pus escape; evulsion is unnecessary.

3°. An acute necrosis of the terminal phalanx, following periostitis and suppuration beneath the periosteum, may be set up after very slight injury, such as the prick of a needle. An early free incision down to the bone, from its base to its apex, should be made, whether there be pus or not. When sinuses have formed, remove the phalanx; the epiphysis of the phalanx generally survives, and gives attachment to the tendons, and hence a useful joint remains.

4°. Inflammation of skin and subcutaneous tissues in any part of the finger, which may lead to true thecal abscess or to necrosis of any of the phalanges. Bleeding may be of service at a very early stage; but if the inflammation be not soon arrested, incisions must be resorted to, and here mistakes are often made. Whether made along the centre or along the sides of the finger, the incisions ought *not* to open the sheath of the tendons; for if the sheath is opened in this position, the tendons invariably slough, and the patient is left with a stiff finger. For this reason, incisions on each side of the finger are safer than one in the centre. Should matter form, and reach the palm, an incision should be made through the palmar fascia, over the head of the metacarpal bone, cutting towards the wrist; a considerable incision may be made without risk of injury to the superficial palmar arch.—*Med. Times and Gaz.* 18th June, 1881.—G. S. M.

Nitrous Oxide in Midwifery.—Dr. Klikowitsch treats of nitrous oxide as an anæsthetic in midwifery in the *Arch. f. Gynäk.*, xviii, 1881. He holds it has the following advantages :—(1.) Perfect freedom from danger to life for both mother and child, and no disturbance of the process of parturition ; (2.) Undoubted anodyne action in all stages of labour ; (3.) Unclouded consciousness during the highest degree of anæsthesia, obtained by mixing oxygen with the nitrous oxide, and the consequent possibility of enlisting the so-called auxiliary forces of parturition ; (4.) Absence of vomiting, and in many cases the control of vomiting that has already set in ; the non-occurrence of a stage of excitement and of the usual unpleasant sequelæ of anæsthesia ; (5.) The absence of any cumulative action ; (6.) The fact that the administration need not be carried on by the physician in person.

The chief disadvantages are the costliness of the gas and its non-portability, comparatively speaking.—*New York Med. Journal.* Dec. 1881.—J. A. A.

Suture of Nerves and Nerve Regeneration.—In a paper in *Centralbl. für Chirurgie* (1881, No. 38) by Wolberg, entitled "*Critical and Experimental Researches on Nerve Suture and Nerve Regeneration*," the author formulates the following conclusions, based partly on numerous experiments performed by himself on cats and hens, and partly on the clinical records of 43 cases in man :—

1. *Prima intentio nervorum* is possible.
2. Suture of nerves is indicated in all recent wounds of nerves ; in old cases only when the importance of the paralysed function makes it necessary, and when other means have failed.
3. Direct suture of the perineurium is best, because of the greater freedom from danger, greater ease of operation, and better coaptation of the divided ends, which is of the highest importance for the result.
4. Though suture does not invariably secure *prima intentio*, still it always promotes nerve regeneration.
5. For suturing nerves a special flat needle and Lister's chromic gut are recommended.
6. In degeneration of the peripheral section of an injured nerve only the medulla is absorbed, the axis cylinder and membrane of Schwann remaining intact.
7. Regeneration of nerve elements takes place in both sections of nerve from the cells of the perineurium. These become free, and spindle-shaped from elongation of the nucleus and

the throwing out of protoplasmic processes from opposite sides. They become united by these processes, and then follows a differentiation of the protoplasm into axis cylinder and membrane of Schwann. The old divided fibres become united with the new, and new medulla is formed, possibly from the nuclei. With the formation of medulla in the old peripheral fibres the process of repair is complete. In cats this process takes $2\frac{1}{2}$ months.

8. The degeneration and regeneration proceed simultaneously.

9. Degeneration goes on equally throughout the whole of the peripheral section; regeneration proceeds centrifugally.

10. With regeneration normal function returns and atrophic alterations disappear.—D. M'P.

Treatment of Acute Articular Rheumatism.—Dr. Carpani (in the *Milan Annali Univ.*, 1881) recognises four different methods of treating this affection, and gives special indications for their employment.

1. Salicylate of soda is the most suitable remedy in cases of acute febrile polyarthritis; with specially severe articular symptoms; but it is contra-indicated by concomitant cardiac affection, and nervous, gastro-intestinal, or renal disorders.

2. The bi-sulphate of quinine is indicated when the rheumatism is one of the results of malarial infection, or where those conditions are associated.

3. Benzoic acid is of special value when acute febrile articular rheumatism is complicated by nephritis.

4. Blisters are the most reliable means of treatment when the rheumatism involves but a few joints or only one.—*Bull. Gén. de Thérap.* 15th October, 1881.

Fievre Intermittente Hepatique.—In a clinical lecture on some of the effects of the chronic impaction of gall stones in the bile passages, Dr. Osler (Montreal) records two cases similar to those described by Charcot under the above name. The ague-like attacks were severe, and occurred at intervals over nine months in the one case, and eighteen in the other, but not with the periodicity of ague. He notes, what is not mentioned by Charcot, that in his cases there was a deepening of the jaundice after the paroxysms. One of the cases seemed to support Murchison's suggestion, that the attacks "are due to the simple irritation of the stone, and are analogous to the febrile paroxysms resulting from the passage of a catheter along the urethra." Both cases recovered. Large doses of

olive oil, recommended for cases of gall stone, were tried without effect; otherwise, there was nothing special in the treatment.—*Med. Times and Gaz.* 30th July, 1881.—G. S. M.

Two Uncommon Accidents from Lead Poisoning.—In *La France Médicale*, 26th June, 1880, there is recorded a case of saturnine aphasia that occurred in the clinique of Professor Bouchard. The patient, a man 39 years of age, had always been a ship painter till, in November 1879, he had entered a white lead manufactory. Though previously he had never suffered from lead poisoning, he had only been eight days at his new employment when he was attacked with lead colic. After a short stay in hospital, he returned to his work quite well, but on the second day after he was seized, while at work, with an attack of syncope, which lasted for about a quarter of an hour. Next day he was again admitted into hospital, when it was elicited that he had never had syphilis, was not addicted to alcohol, and had no hereditary diathesis. He suffered from constipation, and had the characteristic blue line on the gums, but his only complaint was of severe, persistent headache. Three days later he had symptoms of slight delirium and vertigo, but these passed off rapidly, and after a week he was so much improved, that he was engaged in assisting in the ward work. But at the end of that time he had an attack of vomiting during the night, and in the morning he was found to be quite aphasic, without any disorder of sensation or of motion. After a few hours speech returned, and the only symptom left was the headache. The physician could ascribe the aphasia to nothing save the lead poisoning, as examination failed to detect anything abnormal in any of the organs. The explanation offered is either that the aphasia was due to a functional disorder, such as cerebral anæmia; or, and more probably, that it was due to the presence of lead in the cerebral substance, and to the alteration or the temporary modification of its anatomical elements under the direct influence of the poison, the temporary character of the attack being due to the poison not being fixed in the brain, but capable of elimination or of displacement to some other part of the system.

In the number of the same *Journal* for 15th February, 1881, a case is recorded of a man, 44 years of age, also a ship painter, who, some weeks after he had suffered from his first attack of lead colic, became affected with coldness, discoloration, and pain in various parts of the body. On admission into hospital, the only parts affected were the toes of both feet,

which were livid and cold as ice, and painful on pressure, though the prick of a needle was not felt. On one of the toes there was a little vesicle full of a black fluid, evidently indicating gangrene. M. Labbe placed both the lower limbs in a bath of oxygen, with immediate good effect, and the patient recovered in a few weeks. M. Sainton, in recording the case, draws special attention to

1°. The cause. Such vaso-motor affections have not, he says, been previously noted in lead poisoning.

2°. The treatment. He attributes the successful result to the cutaneous absorption of the oxygen, and its direct action on the elements suffering from a local absence of oxygenated blood. The bath was applied by enveloping the limbs in a sort of caoutchouc bottle, and the softening of the skin due to this envelopment presented favourable conditions for absorption.—G. S. M.

Iodine, Quinine, and Salicylic Acid.—After recent experiments with salicylic acid in intermittent fever, Dr. Obletsow concludes that this medicine, if it is administered in small doses, gives uncertain results; if, on the contrary, it is given in large doses, the stomach is deranged.

Dr. Braumik, wishing to ascertain if tincture of iodine taken alone or combined with quinine would have any influence upon the duration of fever, made some experiments on 28 individuals. These have demonstrated to him that in each case the tincture of iodine taken alone, during eight hours at least, did not lead to any favourable result, affecting neither the duration the intensity, nor the frequency of the access. Combined with quinine, the tincture of iodine seemed, on the contrary, to augment its action, small doses of the quinine having thus a more marked effect.

Braumik concludes that in intermittent fever iodine is an adjuvant of, and not a substitute for quinine. From an economical point of view it presents great advantages. (*Riv. Clin. di Bolog.*, 1881.)—*Lyon Méd.* 23rd Oct., 1881.—J. A. A.

Puerperal Infection communicated to a Man.—This case was noted during the epidemic which visited Pollenza in December, 1876. A man aged 38 years had connection with his wife recently confined, and yet suffering from fever and rigors. He experienced during coition a pain in the neighbourhood of the frænum. The evening of the same day he became feverish with rigors and felt pain at the fold of the groin. A

red erysipelatous rash appeared, and extended down the thighs. The twelfth day the temperature was over 40° C.; the scrotum became gangrenous and well marked septicæmia set in. He died of hydrothorax on the 17th day. This case is interesting as demonstrating the similarity between puerperal infection and the septicæmia of surgery. The poison probably entered at some solution of continuity of the tissues.—*Progrès Médical*, Dec. 1881. *Lyon Méd.* Dec. 1881.—J. A. A.

Chorea.—Dr. Haven, in the *Boston Medical and Surgical Journal*, gives a digest of two hundred cases from which the following facts are noted:—Females were affected more than males in the proportion of three of the former to one of the latter. The greatest number of cases occurred between the ages of six and eleven, the next most frequent period being between eleven and fifteen. As to season, winter and spring were the most prolific; and, taking the year through, nearly two and a half times as many cases occurred during the first six months of the year as during the last six months. In thirty-one cases relapses were noted, and of these the date was recorded in nineteen cases, fourteen in the first six months of the year. Among etiological factors, rheumatism was noted in forty-two cases. Other factors were cardiac troubles, the puerperal condition, physical influences, and fright (seven cases.) In thirteen cases speech was affected, in the majority (ten cases) this being associated with choreic movements of the right side. In sixty-six cases in which the seat of motion was noted, it was limited to, or predominated on, the right side in fifty, the left side in sixteen.—*New York Medical Journal*. Dec. 1881.—J. A. A.

Clinical Researches and Experiments upon the Pathology of Erysipelas.—D. Dupeyrat, in a monograph published by him in Paris this year, bears out the experiments of Dr. Orth, as demonstrating the parasitic nature of erysipelas.

The conclusions with which he terminates his thesis are as follows:—

- (1.) Erysipelas is due to a living substance strange to the organism, and capable of reproducing itself in the economy.
- (2.) This material or substance is a spherical bacterium, isolated, or united like beads, but always fixed.
- (3.) This immobility is a characteristic which he believes to be pathognomonic of the bacteria of erysipelas.
- (4.) This bacterium is the only one which seems to be able to produce erysipelas.
- (5.) This germ is incapable of flourishing in all subjects,

certain individuals affording a more favourable soil for its development.

(6.) A wound is necessary for the penetration of the germ into the economy.

(7.) Artificial erysipelas can only be produced in animals by the specific bacteria.

(8.) The serum of an erysipelatous bulla, deprived of its bacteria, cannot produce this exanthem.—*Lyon Médical*. 9th October, 1881.—J. A. A.

Fracture of the Neck of the Femur.—Dr. Wight, in the *Proceedings of the Medical Society of the County of Kings* for October, 1881, has some interesting observations on fracture of the femoral neck.

The following conclusions, deduced from careful examination of 21 cases, are worthy of record :—

(1.) In all, there was more or less obliteration of the inguinal fold on the side of the injury. This was probably due to two causes—(a) Effusion in front of the injured femoral neck; (b) contraction of the soft parts in the same situation.

(2.) About one-half of the patients were examined standing up; and when the foot of the injured side was brought down to the floor, the gluteo-femoral fold on that side was seen to be lower than that on the uninjured side.

(3.) There was out-rotation of the injured limb in all the cases.

(4.) In all the cases of impaction of the base of the femoral neck, the upper end of the shaft was materially enlarged. There were eight such cases.

(5.) In all the cases of impaction of the top of the femoral neck into the femoral head, the upper end of the shaft was not enlarged. There were five such cases.

(6.) In all there was more or less prominence of the outside of the hip, but the gluteal region was somewhat flattened; and generally there was a fusiform enlargement of the upper part of the thigh.

(7.) In 14 of the 21 cases there was more or less asymmetry of the lower limbs. And this point is important, for two reasons: First, It was determined by measuring from the tops of the great trochanters; Second, it agrees with the general fact that about two persons out of every three have asymmetry of the lower limbs; hence, the measurements from the tops of the great trochanters to the external malleoli were probably correct; hence, also *such a measurement may be recommended*

as a valuable aid in making a diagnosis of fracture of the neck of the femur.

From a table of measurements he deduces as follows:—

(1.) The average shortening, after fracture of the neck of the femur, is about one-half inch.

(2.) The greatest shortening was one inch and a half.

(3.) The least shortening was zero, but in that case there was an actual shortening of three-fourths of an inch.

(4.) The average normal asymmetry was $\frac{4}{100}$ of an inch.—
J. A. A.

Curious Expectoration.—Herterich describes the case of an individual, 19 years of age, who suffered from a trifling catarrh of the pharynx, and who expectorated for 8 or 10 days, bringing up a solid grey sputum. The thoracic organs were in a normal condition, while the pharynx presented no other appearance than a trace of slight catarrh.

On examining the expectoration it was found to consist of transparent mucus containing several cells, and a rounded body about the size of a bean, reniform in shape. The one side of this substance was rough, while the other was smooth. The edges were grey with a yellowish reflection, while the uneven surface resembled grey velvet. The mass broke up easily, but, nevertheless, presented a certain consistence.

Laryngoscopic examination showed the larynx to be normal, but the bronchial mucous membrane was redder than usual, and this redness increased towards the bottom of the trachea. At the level of the sixth, seventh, and eighth cartilaginous rings the mucous membrane was slightly raised, resembling a tumefaction; and at the level of the ninth ring there was hyperæmia of a dull red colour, with slight excoriation. The epithelium was absent, while a little below this ninth ring the hyperæmia ceased.

The author believes that the site where the special concretion formed was represented by the tumified mucous membrane, and he has, in fact, by daily laryngoscopic examination, observed at this point the formation of this curious expectoration.

The inhalation of carbolic acid was without result, but the inhalation of the vapour of iodine for a fortnight, thrice a day, and each time over twenty minutes in duration, effected a complete cure.

The microscopic examination of the sputum showed all the crust to be formed of masses of fungi in great abundance. These fungi were all of the species *Aspergillus curatium*. (*Aerztl. Intellig.*, 1880.) *Il Movimento*. 1881.—J. A. A.

Books, Pamphlets, &c., Received.

- Historical Sketch of the Medical Societies of Baltimore, from 1730-1880.** By G. Lane Tannahill, A.B., M.D. Read before the Medical and Chirurgical Faculty of the State of Maryland, at its Celebration held in honour of the Sesqui-Centennial Anniversary of the Founding of Baltimore. Baltimore: J. W. Borst & Co. 1881.
- On Diseases and Injuries of the Eye; a Course of Systematic and Clinical Lectures to Students and Medical Practitioners.** By J. R. Wolfe, M.D., F.R.C.S.E., Senior Surgeon to the Glasgow Ophthalmic Institution, &c. With Ten Coloured Plates, and 157 Wood Engravings. London: J. & A. Churchill. 1882.
- What to Do in Cases of Poisoning.** By Wm. Murrell, M.D. London: H. K. Lewis. 1881.
- Indigestion, Biliousness, and Gout in its Protean Aspects. Part I.—Indigestion and Biliousness.** By Milner Fothergill, M.D. London: H. K. Lewis. 1881.
- Diseases of Women; including the Pathology, Causation, Symptoms, Diagnosis, and Treatment: a Manual for Students and Practitioners.** By Arthur W. Edis, M.D., London. With Illustrations. London: Smith, Elder & Co. 1881.
- Syphilis and Local Contagious Disorders.** By Berkeley Hill, M.B. London, F.R.C.S. Second Edition. Entirely Re-written by Berkeley Hill and Arthur Cooper. London: Smith, Elder & Co. 1881.
- On Chorea, and other Allied Movements: Disorders of Early Life.** By Octavius Sturges, M.D. London: Smith, Elder & Co. 1881.
- An Index of Surgery: being a Concise Classification of the Main Facts and Theories of Surgery; for the Use of Senior Students and others.** By C. B. Keetly, F.R.C.S. London: Smith, Elder & Co. 1881.
- Consumption: a Reinvestigation of its Causes.** By C. W. de Lacy Evans, M.R.C.S. England. London: Baillière, Tindall & Cox. 1881.
- Scrofula and its Gland Diseases: an Introduction to the General Pathology of Scrofula; with an Account of the Histology, Diagnosis, and Treatment of its Glandular Affections.** By Frederick Treves, F.R.C.S. Eng. London: Smith, Elder & Co. 1882.

THE
GLASGOW MEDICAL JOURNAL.

No. III. MARCH, 1882.

ORIGINAL ARTICLES.

THE "DOUBLE SPLINT" IN AFFECTIONS OF THE HIP.

By A. ERNEST MAYLARD, B.S.,

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(Read before the Medico-Chirurgical Society, on 13th January. 1882.)

MR. PRESIDENT AND GENTLEMEN,—The splint which I wish to introduce to you this evening, and which some of you may have seen at the Exhibition of the International Medical Congress, has in its construction no claim to any originality of my own, nor in its special application many additional points that I shall venture to suggest beyond those which have been urged by the chief of the few who at present use it. It is rather as one who, from personal experience in its use, wishes to testify to its great merits and value in the particular classes of cases to which it is adapted that I bring it before you.

To Mr. Bryant, perhaps more than to any one else, belongs the credit of introducing the splint in its present form, and explaining its special advantages; but it is hardly just to couple his name with it, thereby excluding others who constructed what he has slightly, though very materially, modified. If it should have a special name, it would be more just to call it Bryant's Modification of Campbell de Morgan's Splint—a long name—perhaps not unsuitable for so large a splint and its duple character; but slightly, I think, too lengthy for common parlance, so I have preferred to call it simply the "Double Splint." The affections of the hip in which the splint is especially applicable are cases of morbus coxarius, and fractures of the neck of the femur, whether intra- or extra-capsular.

I will first deal with its application in hip disease; and before doing so I would like to remind you of a few points in that affection and its present method of treatment which will enable me better to illustrate the special advantages of the one I now venture to introduce to you. We have disease in a joint which, of all others, is one of the most freely movable, most frequently moved, and acted upon by some of the most powerful muscles in the body; hence, to obtain what is so absolutely necessary for joint repair—perfect rest—movement must be checked, muscular action counteracted, and still further, any pressure of the inflamed surfaces upon each other prevented. In the earlier stage of the disease there is usually slight affusion into the joint, which may, perhaps, of itself, or in conjunction, as is most probable, with muscular spasm, cause the limb to assume a slightly flexed, abducted, and externally rotated position, the pelvis at the same time becoming adducted. These positions increase until the onset of the third or latest stage of the disease, when the limb changes from that of abduction and external rotation to adduction and internal rotation with abduction of the pelvis. These are the conditions we have to deal with, and it matters not what be their cause, whether due to muscular action, to ligamentous relaxation and contraction, or to serous or purulent affusion into the joint; the treatment is to place the limb in the best position for repair, whether that repair be to the reformation of a perfect joint or an imperfect one by ankylosis.

To counteract the muscular action and to prevent contact of the inflamed articular surfaces extension is now almost universally adopted; but to prevent movement and to procure a proper position for the limb different methods are in use, and none that I have seen effectually secure either. Three kinds of apparatus are principally in vogue—one where simple extension is produced by a weight attached to a cord, passing from the limb over a pulley fixed at the foot of the bed, counter extension being produced by either raising the bed, as in Gordon Bucks' method, or by passing a band beneath the axillæ, and fastening it to the bed above the head of the patient; another kind where, with a similar method of extension, a long outside splint is added; and a third, where the extension is produced from the side of the splint itself, counter extension being obtained by a perineal band and the splint fixed above by an abdominal or thoracic belt. The first, that of simple extension, is perhaps the worst, for not only is the patient frequently seen propped up upon his elbows,

thereby flexing the thigh, but also wriggling about, sometimes on one side, sometimes on the other. It is needless to add, also, that in every movement of the patient for cleaning or for dressing purposes, when such are needed, the joint again suffers from want of rest; and, still further, there is the frequent absence of extension from either the weight resting upon the floor—the patient having managed to slip down in bed—or the cord has got dislodged from the wheel, and become jammed between it and the wheel support—a very frequent occurrence. Then, again, in removing the patient from the bed the extension has to be taken off. Another objection to this method is the one-sided “pull” which it produces, causing an abducted position of the limb, a position which is neither a good one for ankylosis nor, I venture to think for rapid repair. For if it be true, as pathologists tell us, and anatomy also suggests, that the disease most frequently commences either in the capsule or lig. teres, this abducted position of the limb tends, on the one hand, to put into tension the inner part of the capsular lig.—that portion which Henle describes as the pubo-femoral; and, on the other, to jamb together more closely the swollen and inflamed lig. teres by approximating its femoral and cotyloid attachment. So that any movement in this position is likely to prove more deleterious than if the capsule be in a perfect state of relaxation, and the two attachments of the lig. teres slightly separated—conditions which exist when the limb is in a straight line with the trunk.

With regard to the second form of apparatus, that of the addition of a long outside splint to the above method of extension, it will be readily seen that many of the objections raised in connection with that will be also applicable here. There still remains the difficulty of moving or dressing the patient. Nor is the abducted position of the limb remedied. It possesses a slight advantage over the above, the thoracic or abdominal band preventing, though very ineffectually, the patient raising the upper part of the trunk, and the outside splint checking slightly the external rotation.

The third method of treatment where side splint and extension are combined in one apparatus is decidedly the best of the three, but still not destitute of many of the objections which exist in the other two. There are many forms of this kind of apparatus, as Bower's, Sayre's, Barwell's, M'Leod's, and others, all possessing one common source of objection—a perineal band. This is for counter extension, and, so far answers its purpose well, the fixed point and that which bears

the main pull, being the tuber ischii, but considerable pressure is produced just over the head of the bone anteriorly, and just where in the earlier stage of the disease, when there is effusion, the joint is so acutely sensitive. Still further, the band becomes objectionable when at a later stage of the disease there may be discharging sinuses on the front or inner side of the thigh. I am aware that there are many cases in which the perineal band answers well, not only as serving for counter extension but also in keeping the pelvis applied to the splint, from which otherwise it nearly always sinks; but there still remain lacking those conditions needful for the perfect immobility of the joint, so that repair is both less rapid and less perfect. Abduction, though not produced in the same way as in the above two methods, is still not prevented; for the pressure of the splint upon the trochanter and crest of the ilium, induced by the way in which it is fastened above with an abdominal or thoracic band, causes it to assume that position by simply making a fulcrum of the projecting prominences of bone. This pressure, too, upon the trochanter, which no simple indentation of the pad entirely prevents, is an objection. The presence of a bracket in the side splint removes both these objections, and where with the bracket is coupled a foot piece and a cross piece the best kind of unilateral apparatus is obtained. The great advantage in this class of splint is undoubtedly the persistent extension which it permits. On the respective merits of the different methods of extension in each kind of splint I shall not enter.

To sum up, gentlemen, concisely the criticisms I have ventured to make upon the different kinds of apparatus at present in use, and to be thereby better able to point out how they are dealt with in the double splint, I would enumerate the following:—

- 1st. The patient is not prevented from moving.
- 2nd. Any movement of the patient for dressing or nursing purposes, almost certainly involves movement of the joint, and not unfrequently causes pain.
- 3rd. There is a want of parallelism in the lower limbs, the affected side being caused to assume an abducted position with outward rotation.
- 4th. Extension is not always persistent, and when it is so, has to be produced by unavoidable pressure upon the joint, which may prove painful to the patient, and from its position inconvenient in cases of discharging sinuses.
- 5th. Pressure upon the trochanter by the unbracketed

side splint causes abduction of the limb, and the head of the bone being driven into its socket, the inflamed surfaces are brought into contact, and movement which is permitted proves more deleterious.

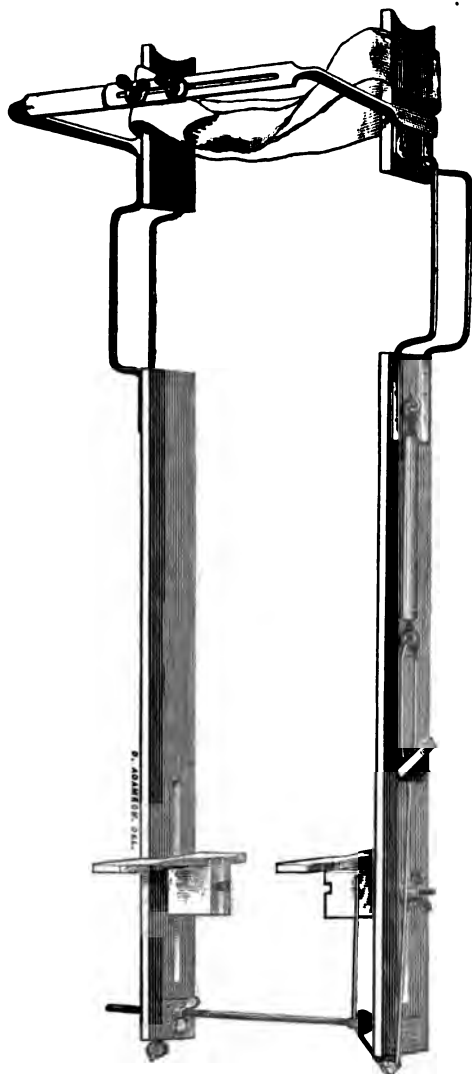
6th. The abdominal or thoracic band employed to fix the splint above, when tight, tends, in the absence of a bracket, to lever out the limb, and when loose, as it frequently gets, permits the patient to flex the trunk upon the thigh.

If you will now be good enough to look at the splint, I will point out how these several defects are remedied; and, 1st, as to the patient's own chance of movement. I think you will agree with me that when once the little one is tightly fixed in, there is a very poor chance of his getting loose. Indeed it is absolutely impossible for him to produce any movement save that of the arm, head, neck, and a slight tilting of the pelvis, which is possible in the dorsal decubitus. So that not only is the joint itself practically immovable, but any jar or shock from the movement of other parts prevented.

Then, as to the possibility of moving the patient for dressing or cleaning purposes without causing movement of the joint or pain to the patient. This is admirably affected by the splint; and had it no other claim for recognition, I think this feature alone would prove sufficient to ensure it. The patient can be easily lifted from one bed to another, or from one room to another; and as I have frequently done, carried patients into the open air, thus coupling with the local measures a very useful and essential item of constitutional treatment in many of this class of patients. With one hand beneath the buttock and one beneath the back, movement is easily effected. Again, the patient can be readily turned on to his side, thus giving convenient access to bed sores and to wounds, whether the result of the disease or the sequence of operation. All this can be easily effected without the least pain to the patient, and with the happy assurance that the natural process of repair is being in no way impeded or interfered with. The freedom from pain is frequently well marked. The little patients, when entering the hospital, cry at the least attempt at movement of the limb, but after a day or two in the splint, the acute sensitiveness of the joint subsides; and though there is at first a slight objection to so formidable a companion, they soon get used to it, and gain an affection for it from the security which they feel in its wooden embrace.

On the importance of parallelism of the limbs upon which Mr. Bryant lays such great stress, and indeed upon which he

argues the splint has its greatest advantage, I am not inclined, with all due deference to his opinion, to wholly coincide. For, judging from results, it cannot be said that



that position in which the limb becomes ankylosed under the one-sided treatment—if I may so express it—is so very un-

satisfactory. Supposing the joint unite, as it usually does in an abducted position, the pelvis always accommodates itself, and not necessarily at the expense of any spinal curvature, but by the amount of motion which becomes developed at the sacro-iliac synchondrosis. Still, so far as outward appearance goes, the somewhat ungainly gait produced by the excessive rolling of the pelvis in ankylosis in the abducted position is materially lessened by union in the parallel. You will see by looking at the splint how well the abduction and external rotation of the limb is prevented. The extension, which can easily be applied to either side, is fixed to a sliding foot-piece, and to this the foot is firmly fastened, so that any tendency to outward rotation is checked. Counter extension is produced by downward pressure of the opposite foot upon the corresponding fixed foot-piece, the whole of the limb being bandaged to the splint, the knee cannot flex; and from the close application of the splint to the sides of the trunk above, it is impossible to produce any lateral deviation by the one-sided pull. Since, then, both abduction and rotation are prevented, there is an absence of all ligamentous tension; and since also counter extension is obtained at a point distant from the affected part, the joint is free from any pressure similar to that produced by the perineal band.

The presence of a bracket, seen on either side of the splint, removes all possibility of pressure over the joint, and so therefore of those particular parts of the articular surfaces and ligaments in which the disease most commonly commences. They permit the splint also to be easily applied and firmly fixed to the thorax above. The brackets again are particularly useful in allowing freedom of space for dressing in cases where there may be several discharging sinuses, or where excision of the joint has been performed. I think this will suggest one paramount advantage of the splint, the possibility of treating wounds of the joint without in any way disturbing its quietude and natural process of repair. The thoracic band, which is prevented from getting loose by a buckle fastening, passes through a small bracket on each side of the splint, and is thus always kept in position. It serves the double purpose of connecting together the upper part of the side of the splint, and prevents the patient from flexing the upper part of the trunk—principally, however, effecting the latter; the main connection above being produced by a metal cross-bar, which, like the rod below, allows, by means of screws, a lateral separation of the two halves of the splint, so that length is the only consideration in the fitting of it. It will be seen that the

tightening either of the thoracic belt or the upper cross-bar can have no effect whatever in levering out the limb as in the one-sided apparatus, for the presence of the bracket removes all possibility of pressure upon the projecting prominence of bone which acted as a fulcrum in the above methods.

To sum up the advantages of the splint:—

The assurance of freedom of pain to the patient.

The convenience obtained for dressing and nursing purposes.

The perfect position of the limb.

The increased rapidity of repair from the impossible mobility of the joint, and the local and constitutional measures thereby permitted.

It is impossible, from the very variable nature of the disease both as to its origin and its progress, to compare by statistics the average period of cure obtained with the double splint with that obtained by the ordinary methods; but it seems only reasonable to suppose that where those measures are most perfectly carried out, which all surgeons alike agree are most essential for rapid joint repair, cure will be soonest effected. As to actual results, there is no doubt that very good ones are obtained with the one-sided method of extension; and were it but a matter of ultimate effects of those methods, there are few who would wish to change their ordinary mode of treatment for the somewhat more costly one of the double splint. It is rather with the means of affecting the result that the great value of the splint is manifested.

Whatever be the difference of opinion as to the etiology of the disease, its pathology, or the causes of some of its clinical symptoms, all surgeons alike agree in claiming complete rest to the joint as a necessary remedial measure in the active stage of the disease. And yet it is strange to note the satisfied way in which many point to the various unilateral methods they respectively adopt to procure it, while I humbly venture to assert that there is no joint which, in its treatment, suffers so much, both from malposition and want of needful rest, as the hip. It is with this feeling that I have endeavoured to point out where I think the defects lie, and how they are to be remedied by the "double splint."

I shall not detain you much longer, gentlemen, in dealing with the application of the splint in fractures of the neck of the femur. I have not had much experience in its use in these cases; still, from the little I have had, I have every reason to believe the statement of Mr. Bryant, that "it is as valuable for fracture of the thigh bone as for disease of the hip joint." There is this similarity about both—that absolute rest and proper posi-

tion are the two essentials for perfect union. So that almost all that has been said for hip disease might, with equal force, be said for the fractures. I think the following statement which I heard made by Mr. Bryant will best testify to its value, and I will give it without further comment.

"Thirty cases of fractured necks of the thigh, with an average age of 74, had walked out of the hospital with united bone."

CONTRIBUTIONS ON DISEASES OF THE EAR.*

By THOMAS BARR, M.D.,

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No. II.

FURUNCULAR OR CIRCUMSCRIBED INFLAMMATION OF THE EXTERNAL AUDITORY CANAL—SYN.: OTITIS EXTERNA CIRCUMSCRIPTA—BOILS IN THE EAR.

THIS painful and troublesome affection has its origin and seat in a gland or hair follicle in the subcutaneous cellular tissue of the external canal of the ear. Like furuncular inflammation in any other part of the body, a boil in the ear is attended by the formation of a core, composed of sloughed connective tissue or of a necrosed follicle or gland, around which there is usually more or less purulent formation. It must be remembered, however, that an abscess, not of the nature of a furuncle, may form in the subcutaneous tissue of the external auditory canal.

The disease does not often terminate with a single boil; we generally find a succession of them, and that, while one is passing away, another begins to manifest itself. We frequently find at the same time boils on other parts of the body, especially on the scalp, eyelids, and face.

Boils in the ear are found most frequently in adults. Women, particularly at the climacteric period, seem to be more liable to the disease than men. While the disease may affect persons who are otherwise healthy, and even robust, it is frequently met with in those whose general state of health is defective, particularly in those whose digestive

* See December number of *Journal*—"Foreign Bodies in the Ear."

functions are badly performed. We may thus meet with the disease in the anæmic woman, or in the *bon vivant*.

Local causes, however, play the most important part in the etiology of the disease. Mechanical irritation, as the use of pointed substances to relieve the feeling of itchiness, may excite the disease. Hence boils are often found where chronic scaly eczema already exists in the cutaneous lining of the external canal of the ear.

The prolonged action of pus or other fluid, such as water or ear lotions, upon the skin of the canal, is a very frequent exciting cause of the disease. For this reason, boils in the ear are a frequent complication of chronic purulent diseases of the middle ear. Solutions of alum seem to be especially liable to set up the disease.

The action of cold air or cold water, or of chemical irritants, may also produce furuncular inflammation, but these causes are more likely to excite the diffuse form of inflammation.

Recently, Dr. Löwenberg, of Paris, * stimulated to the enquiry by the discoveries of M. Pasteur, has made important researches into the parasitic origin of furunculi in the ear, as well as in other parts of the body. His investigations, and especially his discovery of micro-organisms in the contents of the boils, have satisfied him that the disease is always due to the invasion and multiplication of a special microbe, belonging to the family of the micrococci. The parasite is derived from either of the two great media, air and water, but especially from the latter, and enters a hair follicle, where it excites the intense inflammation characteristic of a boil. We shall see afterwards how this view of the disease, if accepted, would modify and guide the course of treatment.

The symptoms experienced by the patient are usually pain, impairment of hearing, and subjective sounds in the ear. The degree of their severity depends upon the intensity of the inflammatory process, and upon its situation in the canal of the ear.

If the inflammatory process is mild, and if its seat be at the outer entrance of the ear, the painful symptom in the ear sometimes amounts to only a sense of warmth and fulness, or "stopping up." If, on the other hand, the inflammation is more intense, and especially if it is situated in the deeper parts of the canal, so that the inflammatory area has an osseous basis, the pain is usually intensely acute.

Patients often describe it as that of a painful sense of

* "Le Furoncle de l'Oreille et la Furunculose." Par Löwenberg.—*Le Progrès Médical*. Nos. 27, 29, 30, 32, 33, 34, 36. 1881.

stretching, and a distracting beating or "hammering in the ear," worse at night, with occasional intermissions of an hour or two. A sharp pain also frequently radiates over the side of the head, and I have not unfrequently found the patient complain of a particularly painful spot on the parietal protuberance of the affected side. The pain in the ear is aggravated during chewing or speaking, or any other movement of the lower jaw, this being due to the close relationship between the canal of the ear and the articulation of the lower jaw. Pulling the auricle of the affected side, or lying upon it, also aggravates the pain, while incautious attempts to introduce a speculum cause intolerable suffering. The tragus is often especially tender to touch.

In some cases, and particularly when the furunculus is situated on the posterior wall of the osseous part of the canal, the soft parts over the mastoid process may be red, cedematous, and very painful on pressure, and the auricle juts out somewhat from the head, symptoms thus simulating, in their intensity, periostitis of the mastoid process.

The degree of impairment of hearing depends upon the extent of the occlusion of the canal by the disease, or upon the amount of concomitant hyperæmia of the middle and even of the inner ear. The tinnitus aurium, when present, is usually of a humming or buzzing character, and is due either to the causes mentioned as producing the deafness, or to the sympathetic relations between the canal of the ear and the labyrinth.

In irritable systems, or in very severe cases, there may be considerable febrile disturbance, even delirium, especially at night.

In examining the canal of the ear we must use caution and gentleness, simply employing the reflecting mirror until we ascertain the position of the boil; if this is found to be situated in the deep part of the canal, we may then introduce a speculum very gently for a short distance. It is important to keep in mind that if a patient complain of the symptoms we have described, the ear speculum must not be introduced before reflecting light into the entrance of the ear, and ascertaining the condition of the canal. The thoughtless attempt to push a speculum into the external auditory canal when a boil is at its entrance will cause the most acute pain.

The most frequent position for the furunculus is in the anterior wall of the cartilaginous section of the canal, where it usually forms a distinct rounded bulging. We may find the colour of the bulging little changed from that of the normal skin, especially at the early stage, when the inflammation

is mainly in the tissue under the skin. At a more advanced stage, however, the skin over the furunculus is usually distinctly red. The central part of the tumour is very sensitive when touched with the point of a probe. There may be two or even three furunculi found at the same time, but this is rare, as one usually passes away, or nearly so, before another appears.

The disease sometimes passes off without suppuration or rupture. Much more frequently, however, after from three to five days, a reddish, seldom yellowish, spot appears on the surface of the boil where it bursts, giving exit to some drops of thick pus and to a small flaky mass of sloughed tissue. This latter may require to be helped out by gentle pressure on each side with a probe. Immediate relief usually follows the rupture of the boil. The purulent discharge from the boil is generally small in quantity and short in duration, but in certain dyscrasia, or where there has been defective treatment, especially the want of proper cleansing, the disease may take a more chronic course. The edges of the opening may then become flabby and undermined, and the opening may exude a thin sanious matter. Only in very rare and exceptional cases, however, does the disease lead to any affection of the underlying bone. It is frequently found that increased formation of epidermic scales and cerumen follows an attack of furuncular inflammation, producing deafness. Hence, it is well that the patient should return for examination a month or two after an attack, so that such an accumulation, if present, may be removed.

Furunculi of the ear may be most readily mistaken for the diffuse form of inflammation of the canal. In the former, however, the swelling is more localised, and the pain, as tested by the probe, is limited to a spot at the centre of the swelling. In the diffuse form of inflammation the swelling is uniform and concentric, while there is also usually much more purulent secretion or epidermic exfoliation than in the circumscribed variety of inflammation. A saccular or longish swelling is sometimes found in the upper and back part of the osseous canal, which might be confounded with a furunculus. The swelling referred to is made up of a collection of pus which has been secreted in the middle ear, and which has burst through the osseous partition separating the mastoid cells from the canal of the ear, forming in this way a collection under the skin of the latter. Here, however, the history of the case enables us to avoid any error of diagnosis.

The prognosis of this disease is very favourable. It is, how-

ever, very important to remember, and to warn the patient that several successive boils may form, the one immediately after the other, with recurrence, on each occasion, of the painful symptoms, before the disease fully disappears. It is also to be noted that certain persons have regular and periodic recurrence of boils in the ear, at intervals of weeks or months, and extending over a term of years.

Treatment.—We shall consider this under the three heads of (1) preventive measures; (2) remedies to cut short, or to mitigate, the inflammatory process; (3) constitutional treatment.

(1.) Causes which are known to excite boils in the ear should, if possible, be removed. If a patient is suffering from a purulent disease of the middle ear, we must use means to prevent the constant saturation of the cutaneous lining of the canal with pus, and we must avoid the prolonged contact of ear lotions, or the too frequent use of the syringe. The canal of the ear must, in short, be kept as dry as possible. This is best done (*a*) by adopting, as much as possible, the dry treatment of purulent diseases of the ear, instead of the use of lotions; (*b*) by the patient wiping away the purulent secretion from the canal of the ear, by means of absorbent cotton on a cotton holder, as often as is required; and (*c*) by keeping constantly in the ear a cylindrical roll of cotton, of sufficient size to occupy the greater length of the canal of the ear; this cotton plug should be changed as frequently as may be required by the quantity of the secretion. Chronic eczema, or pruritus of the external canal of the ear, if found to exist, should always be removed by appropriate treatment.

(2.) At an early stage, the inflammatory process may sometimes be checked and suppuration prevented by the application of caustic, or strongly stimulating substances. Wilde recommended the solid nitrate of silver, or a very strong solution of the same caustic, as being very efficacious. Von Tröltsch, with the same object in view, uses a saturated solution of sulphate of zinc. We rarely, however, see the disease at so early a stage as to give a good chance to these local applications.

The most effective means of cutting short the inflammatory process consists in incising the inflamed tissue. We should not wait till we are sure of suppuration, as, before that stage has been reached, the relief of tension and the free depletion have an excellent effect in relieving the painful symptoms, and in cutting short the inflammatory process. The incision should be deep and free, as the chief seat of the inflammation is

underneath the skin. A knife with a slender, curved, and sharp-pointed blade is best suited for making the incision. We should not cut *down* upon the inflamed tissue, but from below upwards, as this is much less painful. Afterwards, gentle pressure should be used on each side of the incision with a probe, in order to press out the contents of the boil from the opening, and then the ear should be syringed with warm water and carefully dried with cotton. Warm poultices of linseed meal, along with occasional syringing with warm water, may be used for a day or so after the incision, but it is to be noted that the sooner we stop the application of moisture to the canal of the ear the less likelihood will there be of a succession of fresh furunculi. It is well, after the warm and moist applications have been stopped, and the canal of the ear carefully dried, to paint the walls of the canal with some unguentous substance, such as vaseline, repeating this occasionally for a few days. There is little doubt that this has the effect of diminishing the tendency to recurrence of the boils.

If the treatment by incision cannot be carried out, owing to the aversion of the patient to a cutting operation, or if it is not deemed necessary in consequence of the comparative mildness of the disease, we may employ other remedies to relieve the symptoms. Warmth and moisture are extremely useful in relieving the pain and in hastening the process of softening. These may be applied by means of warm linseed meal poultices, or hot fomentations, which should cover the ear and should be frequently removed. Or, when the lumen of the canal is sufficiently open to allow of the entrance of liquid into the ear, warm water frequently poured into the ear is very soothing to the pain. The sedative effect of the warm water may be increased by dissolving in it some of the muriate of morphia, say 1 grain of the salt to 1 drachm of water, of which 10 drops, warmed, may be instilled into the ear every two or three hours. An ointment consisting of one grain of the muriate of morphia to a drachm of vaseline, has also a sedative effect, and, if it is successful in allaying the pain, it is to be preferred to the moist applications, for the reasons already mentioned. A roll of cotton, soaked in glycerine, and gently introduced into the ear, has sometimes an excellent effect in mitigating the painful symptoms.

If the opening assumes an unhealthy tendency, it should be kept free from secretion by drying with cotton, and we should apply to the part a strong solution of the acetate of lead, which may be repeated a few times, if necessary. If

granulations arise, we must treat them with the solid nitrate of silver.

The general treatment of the patient, especially in the recurrent form of the disease, is of importance. If any general disease or evidence of malnutrition exist, such as anæmia on the one hand, or plethora on the other, we must employ appropriate medicinal and hygienic treatment. In all cases, we should inquire after and regulate the diet, the hours of rest, the use of stimulants, exercise, baths, &c. The digestive functions are frequently found to be at fault, and are, as a rule, to be corrected by careful attention to these points as well as by the judicious administration of medicines. *Liquor arsenicalis* has been recommended as a specific remedy in persistently and periodically recurrent furunculi in the ear.

The views of Dr. Löwenberg regarding the parasitic nature of boils in the ear have necessarily influenced his treatment. The most of what has been said in this paper on the subject of treatment would hold good even if we adopted his hypothesis. But Dr. Löwenberg advocates a new remedy for boils in the ear, based on the supposed parasitic nature of the disease—a remedy, the introduction of which into aural surgery by Bezold, for the treatment of purulent disease of the middle ear, probably constitutes the most important recent advance in this department of surgery. I refer to boracic acid, which Dr. Löwenberg uses in the form of an aqueous, or preferably an alcoholic, solution, as alcohol is itself an excellent parasiticide. He looks upon this remedy as both preventive and curative. It is useful both before and after the incision, and prevents the recurrence or the successive appearance of the boils. In short, by utterly and quickly destroying the special micro-organism, he claims that the disease is at once and completely put an end to by the solution of boracic acid. The solution is warmed, and the ear is filled with it two or three times every few hours.

The evidence upon which he bases his conclusions regarding the origin and treatment of furunculi seems to be almost convincing, and, at all events, sufficient to warrant us in giving a fair trial to his treatment.

Sufficient time has not yet elapsed to have enabled me to put to the test of actual practical experience Dr. Löwenberg's method of treatment. I hope, however, at a future time to give the results of my own experience of the solution of boracic acid as a remedy for boils in the ear.

ON AGARICUS IN THE TREATMENT OF NIGHT SWEATING IN PHTHISIS.

By JOHN M. YOUNG, M.A., M.B., C.M.,
Resident Physician, Western Infirmary.

THE drug agaricus, whose influence in checking night sweating was lately brought into notice in this country by Dr. Wolfenden of Charing Cross Hospital, has been used pretty extensively during the last few weeks in Dr. Gairdner's wards in the Western Infirmary, with results of an extremely satisfactory character.

The drug, derived from the common toadstool, is a light brown bulky insoluble powder of very nauseous taste, and on this account cannot well be administered as such. The plan adopted in the wards at first was to give it, imitating Dr. Wolfenden's practice, in doses of from ten to thirty grains made into an electuary with honey. Although its efficacy against night sweating was very marked when given in this combination, considerable nausea or even sickness was often found to be the result; so that a tincture, of the strength of ten grains to the drachm, prepared by the hospital dispenser, Mr. Hay, was at length substituted, and found quite satisfactory, a proportionately smaller quantity of the drug in this form being required to produce equal effects. A few grains of the principle, which perhaps may be called agaricine, crystallising in long needles like those of strychnine and other alkaloids, were afterwards extracted by Mr. Hay, and administered in pill form, each pill containing 1-12th of a grain, and one or two forming a dose according to circumstances. This is perhaps the most acceptable form in which to administer the drug, and the therapeutic effects obtained have been practically the same.

Without taking up space by citing cases, these therapeutic effects may be classified as follows:—

1. Night sweating becomes proportionately lessened according to the amount of the drug administered; and, if sufficient doses be given, becomes effectually checked or prevented, according to the time of administration.

This was observed to be the absolute rule in all moderate cases of phthisical night sweating where it was tried, and in one case, where the sweating was colliquative, agaricus brought the sweating within moderate limits; though probably, if sufficient doses had been given, it might have cut it completely

short. In other cases of sweating not dependent on phthisis the drug was found to work well; indeed, its most notable effect was observed in the case of a patient who had had sweating of the right side of his body and right leg persistently at night for eight months, and in which a dose of ten grains stopped the symptom for a night almost at once.

Indeed, in the quickness of its action, agaricus resembles atropin. Like atropin, too, the effect is not permanent. In some cases, during the second night, sweating was found to be reduced below its average amount, or even entirely absent; but in the majority of cases, unless the drug was repeated, sweating returned as intensely as ever, and repetition of the drug during a considerable period does not appear to lead to any permanent result. Observation rather points to the necessity of gradually increasing the dose under such circumstances.

2. The effect of the drug against sweating is not more marked than its effect in promoting sound sleep, and relieving troublesome cough, especially of phthisis. This is the most notable fact to the patients themselves, a gradually increasing feeling of drowsiness following its administration in most cases, and this I can confirm from personal experience. In one case in particular, characterised by extremely troublesome and painful coughing during the night, to combat which numerous remedies had been tried with little or no effect, after the first large dose of tincture of agaricus this symptom became entirely subdued, and the patient had sound sleep. Her cough has since been effectually kept under by the remedy. In another case of severe spasmodic cough, of nervous origin, agaricus gave considerable relief when first administered.

The antihydrotic and soporific effects of the drug are probably distinct from one another, and not to be related as cause to effect, since, in some of the cases observed, sweating was always complained of as occurring *during* sleep, the body being covered with perspiration on awakening. Cessation of cough may, however, be the result of the soundness of sleep.

3. Strict investigation seemed to show that the drug has considerable influence in reducing the temperature, in cases of phthisis at least, where the fever is unstable, as much as 2 degrees of a fall having been observed within half-an-hour after administration of 1-12th of a grain of agaricine. Such a marked result was not always obtained by repetition of the experiment in different cases; but the fall observed in this way averaged 1°·4, and had its expression in a relieved feeling on the part of the patient.

Along with the effect on temperature, it may be noted that

the rate of the pulse becomes usually reduced to a corresponding degree, but this effect has not been invariably noticed.

Reasoning from the analogy of the effect of nitrite of amyl on the blood pressure, I compared in five or six cases sphygmographic tracings immediately before and half-an-hour to an hour after the administration of the drug. I was not surprised, however, knowing the difficulty of registering fine differences in pressure by means of a sphygmograph, to find in most cases no discernible difference. In one case, nevertheless (probably one of more than usual susceptibility to the remedy), several trials showed that the tracings of the pulse which, when uninfluenced, had a decided leaning towards the characters of diastole, after the administration of twenty grains, came to assume characters pointing to greater tension, the aortic notch diminishing or entirely disappearing. The rate of the pulse at the same time fell from six to twenty beats. These observations may have some bearing on the rationale of the effects of the drug, but they are far from being free from the chance of fallacy.

Since the administration of the tincture was begun, complaints of sickness were only heard in *one* case, in which the drug had been given over a considerable period. Diarrhœa was only occasioned once, and that in a case where this symptom recurred at intervals independently of the drug. Its laxative action, indeed, was noticed by some patients as very satisfactory. Dr. Wolfenden found that such diarrhœa could be averted by combination with one or two grains of Dover's powder. No other bad effects have been observed.

There can be no doubt, therefore, that this remedy is a very efficient one, specially against some of the most prominent subjective symptoms of phthisis.

Good results have also followed its use in some of the other wards in the Western Infirmary. A sufficiency of the principle of the drug has not yet been obtained to make up a solution for hypodermic injection. Probably the effects following on this method of administration will be even more decided.

No comparative trial of its merits as against other medicines with similar effects was made, the object sought for having been rather to confirm it as a drug at once innocuous and thoroughly to be depended upon against night sweating when administered by the mouth.

Dr. Wolfenden's remarks on this point may be quoted in conclusion:—"Having made extensive trial of those remedies commonly in vogue for checking the debilitating night sweats

of phthisis, I have found many sadly wanting, and only *one*—viz., atropin—that yielded really excellent results. Given in 1-70th of a grain doses it rarely fails. But atropin is a drug of great power, and capable of producing great physiological effects; and, though accidents are very rare, such an accident as an overdose might easily occur, and dispensing is not always faultless. . . . The complete success of agaricus has led me to consider it of value equal to atropin, and the superior to atropin from the fact that it is quite innocuous. . . . I believe it to be a preparation worthy of extensive trial, and of such equal efficacy with atropin that it may supplant it."

SEVEN CASES OF AMPUTATION.

By JAMES WHITSON M.D., F.F.P.S.G.,
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THE following cases may be of interest, as showing some of the work which falls to the province of the surgeon, while acting in a large hospital such as that of the Glasgow Royal Infirmary.

I propose giving a short account of some amputations which have recently been performed by me, while on duty in the wards.

These are always of frequent occurrence in large industrial centres, and they are principally due to accidents with machinery, or in connection with railway traffic. Cases in which amputation is required for disease are constantly occurring, and large cities such as Glasgow seem to foster the development of strumous joints. Occasionally amputations are rendered necessary for gun-shot wounds, but these are not common.

The first case demanding amputation, which came under my care, was that of a patient in Ward XXVIII, Lizzie F—, aged four. She was affected with osteo-arthritis of the left knee joint, which had gone on to suppuration, but as yet there was no formation of sinuses. She was evidently not improving, and amputation was decided on. The thigh was therefore amputated in its lower third, on 5th August, 1880. A long anterior with a short posterior flap was taken. The vessels were secured with silk ligatures, and

the edges of the flaps were approximated by means of wire sutures. An india-rubber drainage-tube was inserted at either corner of the flaps, and the wound dressed with lint soaked in camphorated oil. This was repeated every second day. The wound suppurated, but after the separation of the ligatures it healed up nicely.

The patient made an excellent recovery, and was dismissed well at the end of a month.

The next case was that of Ellen M——, aged ten. This girl had fractured her left femur in its lower third, while engaged in play. A great deal of swelling ensued, and inflammatory action set in, which ended in the formation of an abscess surrounding the lower third of the femur. The abscess was evacuated, and an examination of the part made, when the lower third of the femur was found to be destitute of periosteum, necrosed, and lying in an abscess cavity. Amputation was therefore performed in the middle third of the thigh, on 26th September, 1880. A long anterior with a short posterior flap was taken, and the vessels were secured with silk ligatures. The flaps were brought together with wire sutures, and an india-rubber drainage-tube was inserted at either angle of the stump. Strips of lint soaked in camphorated oil were applied to the wound, and these were changed every second day. A subsequent examination of the amputated limb amply justified the proceedings. In addition to the necrosis of the femur, there was extensive ulceration of the articular surfaces of the knee joint. In this case the suppuration was profuse, owing to the amputation having been performed through tissues infiltrated with inflammatory products. After this ceased, however, the patient made an uninterruptedly good recovery, and was dismissed well in the beginning of November. She is now (January, 1882) a strong healthy girl, able to walk long distances without assistance.

The third case is that of an amputation of the thigh, in consequence of a severe crush of the left leg. It occurred to Alex. R——, aged 14, while engaged at his work in a coal pit. Immediately after the accident, he was conveyed to Ward XXVII, and amputation of the thigh in its lower third was performed on 21st March, 1881. A long anterior with a short posterior flap was taken, and the vessels were secured with silk ligatures. The flaps were brought together with wire sutures, and an india-rubber drainage-tube was inserted at either corner of the flaps. Strips of lint soaked in camphorated oil were applied to the

wound, and these were changed every second day. The stump suppurated freely for some time, and a small portion of the lower end of the femur became necrosed. After this was removed the parts healed up, and the patient was dismissed well in the end of May.

The fourth case is that of James D——, who was admitted to Ward XXVII, on 31st March, 1881. His right hand was run over by an engine, and so severely crushed that the skin in some places had lost all its vitality. He would not allow amputation to be performed at the time, nor for several days afterwards. When sloughing of the entire hand was imminent, the patient was told of the dangerous state of the limb, and with some reluctance he consented to amputation. This was accordingly performed in the middle of the forearm, on 7th April, 1881.

The vessels were secured with silk ligatures, and wire sutures were used to bring the flaps together. The wound was dressed with strips of lint soaked in camphorated oil. The patient did not do well, and this was principally due to the fact that amputation was too long in being performed. The wound suppurated freely. Unfortunately, erysipelas set in, and the patient died of exhaustion on 15th April.

The fifth case was that of John M——, who was admitted to Ward XXIX, on 9th August, 1881, suffering from a severe gunshot wound of the left hand. When examined it was found impossible to save the limb, owing to its shattered state. Amputation above the wrist joint was therefore performed at once, under antiseptic precautions. The blood-vessels were secured by means of catgut ligatures, and the edges of the flaps were brought together with sutures of the same material. A decalcified drainage-tube, threaded with horse hair, was introduced at either angle of the stump, and retained in its place by means of catgut stitches. Dressings of protective plaster and gauze were applied, and when taken down the next day the stump looked well. There was a copious bloody discharge during the first forty-eight hours, and the decalcified drainage-tubes were found to serve their purpose admirably. The horse hair was removed at the end of this time, and ten days later the tubes were taken out, having undergone little change. The wound was dressed every three or four days, and from first to last there was no suppuration. The patient was dismissed well in the beginning of September.

The sixth case is that of Andrew D——, fireman, who was admitted to Ward XXIV, on the evening of 20th August, 1881, suffering from a severe compound comminuted fracture of the right leg in its lower third.

Patient had been carrying a bag of sand across the line, and had not noticed the approach of an engine. Before he could get out of the way he was run over. An examination of the injured limb showed the tibia and fibula to be reduced to fragments, and the foot hanging to the leg by a slight attachment. Amputation of the leg, in its middle third, was at once performed under antiseptic precautions. The vessels were secured with catgut ligatures, and the flaps were brought together with wire sutures. An india-rubber drainage-tube was passed between the flaps, the ends being cut short at either angle. Dressings of protective plaster and gauze were applied to the wound. Two days afterwards the dressings were removed, and fresh ones applied. The stump was found to be looking well, with the exception of a small part of the anterior flap which was sloughing. This was removed in a week's time, the flaps were brought together again, and the wound was dressed every three or four days. There was very little suppuration, and the patient made an excellent recovery. He was dismissed well in the end of September.

The seventh case was that of John P——, who was admitted to Ward XXVII, on the morning of 28th August, 1881, suffering from a severe compound comminuted fracture of the right leg, immediately below the knee. Patient, who was an engine driver, had fallen off his engine, and been run over.

There was a wound sufficiently large to admit two fingers, just below the knee, on its outer aspect. On making an examination here, the fibula was found to be reduced to fragments, and the tibia was split longitudinally for some distance downwards. There was also a continual oozing of blood, and the anterior tibial was found to be divided. A part of the soft tissues was reduced to a pulp, and under these circumstances it was impossible to save the limb. The thigh was therefore amputated at once in its lower third. A long anterior with a short posterior flap was taken. The vessels were secured with silk ligatures, and the edges of the flaps were retained in apposition by means of wire sutures. One button suture was used with excellent effect, and an india-rubber drainage-tube was passed from one corner of the flaps to the other. The wound was dressed with strips of lint soaked in camphorated oil.

At the time of operation (5.30 A.M.) the patient's pulse was excellent, but when seen in the afternoon he was suffering considerably from shock, and he was ordered one grain of opium in pill. As there was some oozing the stump was elevated, and an ice bag applied to it.

Next morning the patient was better, and he had passed an excellent night. The stump was re-dressed, and found to be looking well. The drain had acted efficiently. In a week there was a little sloughing of the anterior flap. This was removed with scissors, and a portion of the femur which was protruding, was taken away at the same time. The wound suppurated freely, and unfortunately there was most extensive bruising of the other leg, which considerably retarded patient's recovery. In the end he was dismissed well, and is now (January, 1882) going about with the aid of a crutch.

From the above account, it will be seen that five of these amputations were performed without antiseptic precautions, and all of them suppurated freely. The fifth and sixth cases were done antiseptically. The fifth case did not suppurate, and the sixth did so slightly.

Catgut, as a ligature, causes little or no disturbance amongst the tissues with which it comes in contact, being bland and innocuous in its character. Silk is provocative of irritation, and produces discharge until its removal, which generally takes place by a slow process of ulceration.

As a suture, catgut permits of a nice adaptation of the parts, and markedly so when buttons are used. Unlike wire, it cannot catch on the dressings, and so give rise to pain, or render the parts in apposition liable to displacement. The researches of Macewen have proved that catgut, which has been hardened in a solution of chromic acid, will, as a suture, resist the action of the tissues for a sufficient length of time to secure coaptation of the parts. Its removal is unnecessary, but if this is wished for, it can be accomplished with much greater ease, to both surgeon and patient, than with wire.

The decalcified drainage-tube causes little or no irritation, and when threaded with horse hair its efficacy is increased, and the discharge is led into the dressings, thus keeping the stump comparatively dry. Hair will not drain pus, but it is an excellent conductor of a bloody or serous discharge, and is, therefore, removed at the end of forty-eight hours. Drainage-tubes of india-rubber are irritating, and though serving their purpose as drains, partake of the action of a seton.

Lint, when used as a dressing, does not allow the discharge

to percolate freely through it, and when we have provided for efficient drainage, our next care should be to see that the discharge is not pent up around the wound. For this purpose, the best dressing is gauze. Its porous nature permits of a speedy absorption of either a serous or bloody discharge.

Pus, from its viscid consistency, does not pass freely through any medium, but it will find its way through gauze more readily than through anything else.

Sponge, when placed next the flaps of an amputation, quickly absorbs discharge, and in doing so it swells out, thus exercising a steady compression on the stump, and checking any tendency to hæmorrhage. It is, however, too expensive a material for general use in this way.

Oakum has been tried in place of gauze, but it is not possessed of absorptive powers, the discharge collecting on the surface as it does with lint.

I have tried the salicylic wool, but did not find it suitable. After being in contact for a short time with a discharging surface, it becomes incapable of further absorption, and unless speedily removed, keeps the parts in much too moist a state for satisfactory progress.

REMARKS ON THE PREMONITORY STAGE OF PHTHISIS AND ITS IMPORTANCE IN RELATION TO TREATMENT.

By JOHN S. MAIN, M.D., Manchester.

"COMING events cast their shadows before," so wrote Campbell. Since then the saying has ever existed; and perhaps will only cease to exist with time itself.

Applied to medicine as well as to every day life, it is also very true; in fact, here it might be extended *ad libitum*.

The fevers have their premonitory stage, or stage of incubation. Pneumonia, pleurisy, rheumatism, and Bright's disease have theirs; and time would fail me to speak of many others.

That a premonitory stage exists in phthisis pulmonalis, as well as in some other forms of disease due to the tubercular diathesis, is a fact about which I think few at the present day are altogether sceptical.

But before proceeding farther, I would mention to what form of phthisis my remarks are meant to refer.

Phthisis may, for practical purposes, I think, be conveniently divided into two forms.

Firstly,—Those forms due to causes acting directly on the lung tissue.

Under this class I would enrol three distinct forms, viz. :—

(a.) That owing to repeated irritation of the air passages—the result of frequent colds.

(b.) That due to the direct irritation of foreign particles—the so-called steel-grinder's phthisis, miller's phthisis, collier's phthisis, in short, "fibroid phthisis."

(c.) That sometimes following on the direct inflammation of the lung substance itself—the so-called "pneumonic phthisis."

Secondly,—And it is to this form that my remarks apply. That form of phthisis due to causes acting constitutionally, and through some default in the system in general.

In this form again, the disease may be primarily set up in the lung, or it may be secondarily set up there owing to infection carried from some previously affected part.

As to the "etiology" of phthisis, it is not my intention here to enter. Suffice it to say, that underlying all these forms—with the exception of the form called "fibroid"—there is the same tendency of the tissues, under certain circumstances, to develop tubercle; in fact, this tendency (perhaps not strictly definable) is the foundation upon which all forms of *true* phthisis are built.

Should a person so disposed be placed under marked predisposing causes, the tendency to develop tubercle, even though only slight, may be brought out; and again, should a person even markedly tending this way be placed in circumstances in every respect favourable, he may pass even a long life without developing any active signs of tubercle whatsoever. In short, if the resisting power of the system—the so-called "*vis a tergo*"—be for any reason reduced below *par*, then the constitution is, as it were, off its guard, and being so, such persons may be attacked at a disadvantage—in other words, tubercle may develop itself; but if the same "*vis a tergo*" be kept in advance, and superior to the other, then the one force may be sufficient to counteract the other, and perhaps even suppress it through life. All constitutional treatment points in this direction—viz., the raising of the resisting force of the system. Should the disease be taken in the premonitory stage, we may be capable thus of checking it, or if once set agoing, arresting it, and for the time being at least, apparently curing it.

So far as I have been able to judge (and I have given

special attention to this subject), it is my positive opinion that the premonitory stage in phthisis is, as a rule, as well marked as it is in another form of tubercular disease—viz., tubercular meningitis, in which this stage is rarely wanting.

What the symptoms are it would be rather difficult to state, as they vary much, and are by no means well defined. Still they are such as to leave no doubt on one's mind that signs of tubercular deposit may soon appear. In some cases I have even examined the patient's chest carefully with the expectation of finding such there *then*.

I by no means mean boasting when I say that on several occasions my preconceived opinions on this point have proved correct; and that at the time I have entered them in my case book as "latent phthisis."

In one case I succeeded in making out the following points from a patient:—That he did not feel well, nothing marked, but more a general feeling of *malaise*; that he sometimes had a coughing attack after meals, for which he knew no cause. *Apròpos* of this, I would remark that this is a not uncommon symptom in early phthisis, often very valuable for purposes of diagnosis, and depending, no doubt, on the sympathy between the lungs and the stomach, owing to both these organs being supplied by branches from the pneumogastric nerve, the action itself being reflex. He thought also he was liable to sweat more than he should be, and that his appetite was not so good as usual. This combination I thought very suspicious indeed, and at the same time not a bad synopsis of such signs as we may expect at a very early stage. I examined this patient's chest most carefully, but was rather disappointed—medically speaking—that I could not make out even one symptom to lead me to think there was any tubercular deposit there at that time. I warned my patient, however, just the same as if there had been tubercle present. Unfortunately, I saw him no more for thirteen weeks when he again returned. On inquiry, I found that after taking the first bottle of medicine he desisted, and thought he was quite well again. At this visit the former symptoms had returned in a worse form, and on examining his chest I then found dulness, &c., at the right apex. From the time of his second visit I had him under my care for a few months. At the end of that time the dulness and other signs were almost gone. The improvement during these few months was most marked; and I have no doubt from the experience I have had in other cases, that had I been able to have this patient under my care for a few months *at the outset*, I might have prevented the disease from appearing

altogether. When we meet with cases in the very early stages of deposition I have found active local and constitutional treatment to be of great advantage. The local treatment I prefer is that by a succession of small blisters, or by keeping up a continuous irritation by the rubbing over the affected part of the ointment of tartarated antimony, *properly prepared*. The counter-irritation stimulates the absorbents and so leads with other means to the removal of the deposit. The constitutional treatment I prefer is that of a combination of tincture of the perchloride of iron and quinine, given after meals with cod liver oil.

As treatment early applied cannot but be most beneficial in all cases of phthisis it would be well, I think, to bear in mind that a premonitory stage of the disease *does* exist, and to treat all suspicious cases as if the disease itself actually *did* exist. Prevention at all times is better than cure, and surely this is true of phthisis, for when once it is set up "behold, what a great fire a very little matter kindleth!" Taken in this way I am sure phthisis is not such an incurable disease as many think it to be. Even in the early stage of deposition I don't think phthisis is *by any means* an incurable disease. The great difficulty, no doubt, is to get our patients to consult us in time, losing thus the very best opportunity both for themselves and us. Still, such opportunities do occur; and so we may have it in our power at times to save valuable lives. In families especially, where we have known phthisis to exist in one case, we can be on our guard for it in others.

Should these remarks be the means of bringing this stage of phthisis more prominently before any of my professional brethren than hitherto, I shall feel amply rewarded.

AN EXPERIMENTAL INQUIRY INTO THE AMOUNT OF HEATING WHICH AIR UNDERGOES IN THE UPPER PART OF THE AIR-PASSAGES DURING INSPIRATION, WITH REFERENCE TO THE AFTER-TREATMENT OF TRACHEOTOMY.

By WM. JAMES FLEMING, M.D.

(Read at the Glasgow Southern Medical Society, 9th February, 1882.)

CONSIDERABLE discrepancy exists in the practice of different surgeons with regard to the temperature and moisture of the

air supplied to patients breathing through an opening in the trachea. Some surgeons keep the patient in what is practically a vapour bath. Others content themselves with the heat and moisture arising from a cloth or sponge wrung out of hot water, and placed near the wound. Others again do not heat or moisten the air at all. It may be assumed that the air inhaled by the tracheotomy wound should, if possible, be heated and moistened to the same extent as it naturally would be in passing from the mouth or nose down to the level of the opening in the windpipe. To determine accurately the amount of this heating, I have made a few experiments. At first a pump was used to pass the air through the upper air passages, but latterly this was achieved much more satisfactorily in the following manner.

Having fully anæsthetised the animal by subcutaneous injection of morphia and inhalation of ether—a combination I can recommend when the animal is to be killed before coming out of the anæsthetic,—the usual operation of tracheotomy was performed, but the trachea divided transversely. Two rectangular canulas (C, C₂, fig. 1), fitting the

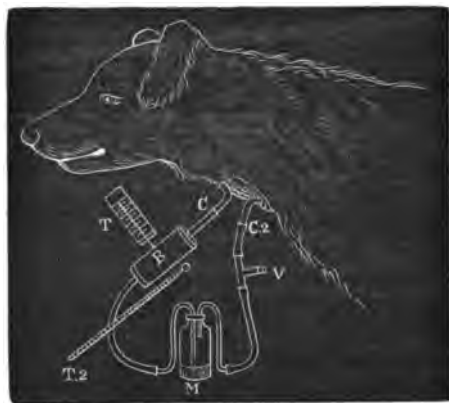


FIG. 1.

trachea, were then tied firmly, one into each of the tracheal openings. These were connected together by a tube having—first, close to what we will call the upper canula (C), a dilatation (B) through a puncture in the wall of which the bulb of a sensitive thermometer (T) was passed; immediately beyond this a mercurial valve (M) was placed, arranged so as to permit air to travel towards the lungs, but absolutely to prevent any return;

beyond this a T piece was introduced, with a valve (V) on the free end, permitting air to pass *out*, not *in*; the tube was then at once connected with the canula (C₂) in the lower tracheal opening; (T₂) in diagram being a thermometer simply laid upon the table close to the dilatation (B) as a check. By this arrangement it is obvious all the inspired air passed from the mouth and nose through the whole length of the apparatus to the animal's lungs, passing the thermometer (T) immediately after issuing from the upper tracheal wound, and therefore recording on it the temperature the air had acquired in its passage from the nose to the level of the tracheotomy wound. The air which had entered the lungs and been heated was all expired by the valve (V) on the T piece, being absolutely prevented from influencing the thermometer by the mercurial valve (M). In some of the experiments an attempt was made to estimate the amount of moisture communicated to the air, first by the use of a wet bulb thermometer, and afterwards by the introduction of a drying tube filled with chloride of calcium into the circuit, but definite results were not obtained. This is the less to be regretted, as there can be little doubt that the air will be nearly saturated by its contact with the moisture of the parts.

In two reliable experiments the following were the records:—

	External air.	Raised in upper air-passages to animal.	Temp. of animal.	Actual rise.	Difference from temp. of animal.
Experiment I, .	59° F.	76° F.	95°·8	17°	19°·8
„ II, .	68° F.	80° F.	99°·8	12°	19°·8

From these results we may conclude that the air is heated to within 20° of the animal's temperature, whatever the initial temperature may be, so that in dealing with human beings a temperature of nearly 80° should be the best. To keep the patient in an atmosphere of 80° would obviously be injurious. I have therefore to suggest that, after tracheotomy, air, heated to a temperature of 80°, and saturated with moisture, should be conveyed by a tube from a suitable apparatus to the inner tracheotomy tube. This can conveniently be arranged with some such apparatus as the following, which I have devised for the purpose. It consists of a tin vessel (fig. 2) filled up to the small window (C) with water, and having a tight-fitting lid, through which pass two tin tubes (A and D), and in which are also two apertures to receive the thermometer (T) and the gas regulator (R). The water is kept at a constant temperature by the gas regulator and the Bunsen burner (B). The opening (D) is connected by a piece of india-

rubber tubing with the internal tracheal canula (C), and care is taken that the tube is so tied either to the person of the patient or a suitable support, that no traction occurs. A short distance from the tracheal canula a T piece is introduced with two valves, one preventing the air passing back into the chamber during expiration, the other permitting its escape, but preventing entrance of air by this channel

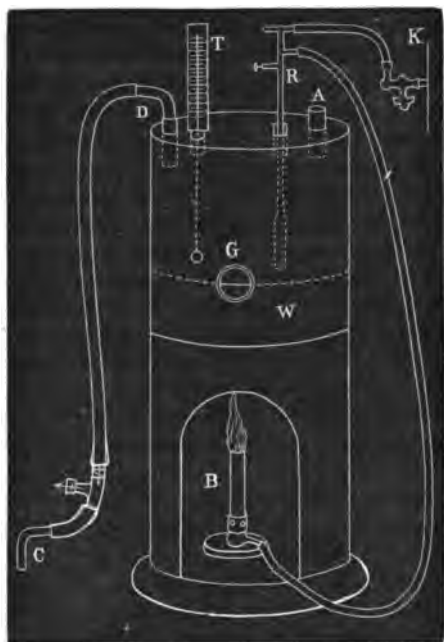


FIG. 2.

during inspiration. By this simple arrangement the air supplied to a patient after tracheotomy may be kept for an indefinite time at the temperature and moisture desired, and I believe comfort will be given to the patient, and we will avoid the pulmonary complications which so frequently follow tracheotomy and discredit the operation by doing away with the benefits which have been derived from it.

PUERPERAL ECLAMPSIA.

BY WILLIAM A. M'LACHLAN, M.D., Dumbarton.

THE following cases of this disease which occurred in my practice may not be without interest to some of the readers of the *Journal*:—

CASE I. Mrs. S——, aged twenty-six, of nervo-phlegmatic temperament, medium height, with osseous system moderately well developed, was pregnant for the second time, and in the seventh month of gestation, in November 1876. Her first labour was a little tedious, but presented nothing abnormal. Her recovery from child-bed was not prolonged beyond the usual period of a working man's wife. She suckled her child up till falling with the present conception and did not feel that it made any excessive demand on her bodily strength. From then up till now there is no definite history of any illness sufficient in her own or in her husband's opinion to warrant the calling in of medical skill except a slight swelling of the face and extremities which, however, they thought was due to her *enceinte* condition, and would in due course pass away.

When called to see her she complained of great weakness and pains in her back. Her face was pale and slightly swollen. She was querulous and very cross, occasionally frowning and turning herself away to the back of the bed. Her pulse was 80 per minute, small, regular. Heart sounds normal. Respiration slightly irregular. Bowels had acted. Urine scanty, pale, almost loaded with albumen. Pupils slightly dilated. Slight indications of twitchings of the muscles of the face and arms. Sounds of foetal heart very feebly heard. Vaginal examination showed no symptoms of uterine contractions; no discharge from uterus.

She was ordered the following draught, which was to be repeated in half-an-hour if she had not slept or quieted down.

R Chloralis Hydratis, gr. xxx.

Potassii Bromidi, gr. xx.

Syrupi Limonis, ʒ ss.

On my returning in an hour, I learned she spat this out, and would not swallow it. She was then ordered the insertion of the following suppository in the rectum—

Morphia Suppository, gr. i.

Shortly after this, the eclamptic convulsions came on, and

with them violent uterine contractions, and in half-an-hour the child was expelled from the vagina. It was still-born. After the birth of the child the convulsions ceased. The mother became deeply comatose, remaining so for about ten hours, when she awoke stupid and confused, which stupor and confusion passed gradually away.

The after treatment consisted in promoting the discharge of the lochia, sustaining the vital powers by nourishing food, and in giving lemon juice freely.

In eight days she was able to be up and moving about the house, though she felt very weak. The albumen was still in the urine, nor did it at any time in her after life ever completely disappear from it, but was there in varying quantities at various times. In June 1880, she again became pregnant, and was delivered in February 1881 of twin children, one of which was still-born. During the period of her gestation she had frequent attacks of vomiting, and twice had severe pleuro-pneumonia of the right lung. She had an almost constant desire to keep her hands in cold water to assuage a feeling of burning, which she maintained was almost ever in them. Toward the latter part of her pregnancy she complained much of headache, and occasionally of mistiness of vision, and twice she had muscular twitchings of an eclamptic nature. Her face and lower extremities were swollen a good deal. Her labour was somewhat precipitate. The mother made a slow recovery; but, from her social circumstances, was compelled to go about when she ought to have been confined to bed. She was unable to suckle her child. It was visible that, from this time, she was gradually becoming weaker. Her blood was becoming more devoid of solid and colouring matter. Despite the free exhibition of chalybeate tonics and nourishing diet, she made no visible improvement. One day in the middle of April 1880, as she was attending to her usual duties, she suddenly became syncopic and died.

CASE II. Mrs. M'D——, aged 33, an intelligent, industrious contractor's wife, has borne six children at full time, had one abortion, cause unknown. She had always enjoyed good health and made excellent recoveries from child-bed. Recently she has had an attack of acute albuminuria.

On 4th November, 1876, at 8.30 P.M., I was called to see this woman, and found her in bed complaining of epigastric pain, severe frontal headache, accompanied with mistiness of vision. When questioned, her answers were somewhat vague. Her manner was querulous, and she was inclined to turn away

from one when questioned. Her face was flushed, temples throbbing, pupils slightly contracted. Her bowels had acted freely. She had some vomiting. Her urine was scanty and highly albuminous. She was in the seventh month of pregnancy. There were slight indications of uterine contractions setting in.

She was ordered a mustard sinipism to the epigastrium, Liq. bismuthi, ʒj, every half-hour, Morphia suppository gr. i, in rectum, also cold lotions to the forehead.

10:30 P.M.—Vomiting has ceased; headache not so intense; slight rhythmical uterine contractions coming on, and apparently increasing in severity. Os uteri sufficiently open to allow the index finger to recognise the presenting part of the child. Membranes intact. No convulsions.

She had another morph. suppository of one gr. in rectum.

12:15 A.M.—An eclamptic convulsion has just come on, beginning in the muscles of the eyeball, and extending from thence over the face, and from this to the extremities, and is accompanied with very forcible uterine contractions; the os uteri dilating freely during the pains. Between each convulsion the woman became semi-comatose. The labour terminated at 1 A.M.

During the passage of the child through the pelvic outlet the mother became furiously maniacal. The child was still-born. The secundines were removed easily. The mother then dropped into a comatose state, in which condition she remained for two hours. At 3 A.M. the eclamptic fits returned, and were recurring every quarter of an hour. They began always on the right side of the face, and thence spread over the rest of the body. Anæsthesia by chloroform was produced, and this was followed by the injection of chloral hydrate, gr. 50, in mucilaginis amyli, ʒi, into the rectum. From this the fits ceased, and the woman slept till my next visit on the following day, on which day the following is a note of her condition:—

5th November, Morning.—Has been quiet since last seen during the night, and has had no return of the convulsions. She lies on her back apparently quite unconscious. Shouting loudly into her ear seems to arouse her for a moment, causing her to fix her eyes and moan loudly. Pupils contracted almost to a pin's point; face flushed; respiration slow and deep; pulse 78 per minute, full, irregular; urine retained, and when removed per catheter, is found to be coloured deep red, and loaded with albumen. There is absence of reflex

action in the extremities when tickled. Liquid placed well back into the faucial arch is swallowed slowly.

Ordered—Hot linseed meal poultices to loins, to be kept on constantly and repeated as often as cold; also lemon juice, *ziii*, and acid tartarici, gr. *xii*, every hour. Milk and beef tea to be given *ad lib.*, putting them well back in the mouth with a spoon.

Evening.—Her condition is much the same as in the morning. Her urine, however, though still retained, is more abundant, and better coloured.

6th November.—No recurrence of convulsions. Still unconscious; face flushed; temples throbbing; pulse 80, full, hard, irregular; pupils irregular, that of the right eye much dilated; irides reflex absent; respiration hurried and irregular; no crepitus or râles in chest; urine still retained, but the quantity is augmented, and its colour is much paler; bowels confined.

Continue the same treatment, with the addition of two leeches to the back of the right ear and pul. jalap, gr. *xxx*, by the mouth, and an oleaginous enema per rectum at once.

7th November.—Has passed a better night than previously. Urine still retained, more abundant, paler, and also containing relatively less albumen. There is a slight return of consciousness manifesting itself by an uneasy sensation during the passage of the catheter. Respiration is better; pulse 72; face is not so much flushed as at last visit; leeches bled freely, and bowels acted.

Continue the lemon juice and tartaric acid, and add pulv. elaterii, gr. $\frac{1}{2}$, every four hours till the bowels act very freely.

8th November.—Still improving. Answers questions such as, yes, and, no, if spoken to loudly. Bowels have moved very freely. Urine passed with the use of catheter. Deglutition much improved.

9th November.—Mental faculties much improved. She wonders what has become of her child, and also what day of the week it is. Complains of being sore all over. Urine passed normally. Albumen diminishing. Face pale. Respiration normal. Pulse 72; much improved in volume and regular. Takes food better.

10th November.—Still improving. Sleeps well. Able to sit up in bed for a little. Feels very weak. Tongue and inside of mouth much excoriated. Urine abundant. Stop lemon juice and acid tart., and have sodæ bibor., gr. *xx*, inf. cinchon. cm., *zss.*, every three hours.

14th November.—Since last note patient has much improved.

The excoriations of the tongue and mouth are nearly healed. Sleeps well. Appetite fair. Bowels normal. Urine still improving.

19th November.—Patient able to move a little about her house. She complains of numbness of the left arm and leg. Urine non-albuminous. Bowels regular. Digestion fair. Pulse, 72. Ordered cit. ferri et strychniæ, gr. viii, ter die.

28th November.—Since last note the numbness complained of in the left arm and leg has progressed, and there is now well marked hemiplegia of the left side. The general health, however, is much better. Urine normal.

6th December.—There is marked improvement in the hemiplegic symptoms. The leg is much more improved than the arm. The digestive functions are well performed. Bowels normal. Urinary functions normal.

May, 1878.—Since last note this woman continued to gradually improve in her general health, and after a period of several months the hemiplegia passed off completely. It was, however, noticeable that her manner, always shy and non-complaining, had become much more reserved, and showed at times evidence of a mild form of dementia. In the beginning of 1879 she again became pregnant, and at the completion of gestation was delivered of a healthy child. She made a fair recovery from child-bed; but was unable to suckle her child, pulmonary phthisis manifesting itself, to which she eventually succumbed.

CASE III. Mrs. J——, aged 26, primipara, was delivered on 29th December, 1881, at 10.20 A.M., of a healthy male child. Her labour was normal, occupying from the commencement of the first till the termination of last stage about eight hours. Secundines normal. She felt quite well on my leaving her at 11 A.M. At 5.30 P.M. I was summoned per telegram to go and see her, as she was taking fits. I arrived at 7.30, and found her in bed, confused and stupid. When questioned she answered slowly and hesitatingly, and was labouring under the delusion that she had slept over the night. Pulse 98. Respiration 20 per minute. Temperature 100° F. Face flushed and swollen. Legs cedematous. Her tongue showed indentation of having been bitten with the teeth. She has not passed urine since the child was born. Her nurse says she had two fits in succession at 5 P.M., and that they lasted in all about five minutes. They were accompanied by twitchings of the eyeballs, foaming and bleeding at the mouth, and spasms of the limbs. She complained previous to the mani-

festations of the convulsions, and she does so still, of severe frontal headache and mistiness of vision. Her pupils are dilated. There is still slight twitching in the eyeballs. Her mother assures me that she never had fits in her life before.

Ordered—Linseed meal and mustard poultices to the loins, to be frequently repeated. Also olei ricini zii , tinct. opii mxlviii , at once. The tinct. opii to be repeated if the fits should recur. Also lemon juice Oj , in water during the twenty-four hours.

30th December.—Since last visit she has had no recurrence of the fits. Vomited severely at 11 P.M. last night. Slept moderately well. Bowels moved twice. Headache not quite so severe as formerly. Mistiness of vision less. Pulse 98. Respiration 22 per minute. Temp. $99^{\circ}9$ F. Urine abundant, of a deep straw colour, loaded with albumen so much so that on boiling it nearly solidifies (the uterine discharges have been carefully excluded). Lochia going on normally.

Continue lemon juice. Repeat oleum ricini without the tint. opii, and give a liberal allowance of chicken soup and milk gruel as a diet. Put the child on the sucking bottle.

31st December.—Passed a fair night. Slept moderately well. Bowels active. Passed about six pints of urine since last seen. Urine still albuminous. Temp. $100^{\circ}1$ F. Pulse 98. Mistiness of vision less. On attempting to read a letter she says all the letters of the words seem to run into each other.

2nd January, 1882.—Patient still continues to improve. Urine still continues abundant, and the albumen in it diminishing. Mistiness of vision gone. No headache. Pupils normal. Lactéal secretion coming into breasts. Pulse 98. Temp. $99^{\circ}6$ F. Lochia normal.

4th January.—Patient complains of slight tenderness over the hypogastric region, which is increased on pressure. Temp. $100^{\circ}1$ F. Pulse 98. Urine not so abundant as formerly. Appetite fair. Bowels normal. Vaginal discharge sufficient.

Abdomen to be covered with linseed meal poultices and Quin. sulph., gr. ii, with Ferri sulph., gr. i, three times a day.

9th January.—Patient able to be up out of bed a little. Urine abundant, and almost free from albumen. Epigastric pain completely gone. Lochia normal. Temperature $98^{\circ}8$ F. Pulse 96.

11th January.—Still keeping better. Temp. 98° F. Pulse 84; feeble. Urine non-albuminous.

Stop lemon juice. Continue the Quin. and iron; also six oz. sherry wine daily.

These cases present several points worthy of consideration. The case of Mrs. S—— shows that renal disease extending over a period of nearly five years, attended at its outset with eclampsia during labour, does not prevent another conception and carrying of the foetus to the normal time of utero-gestation and the completion of the labour normally.

In the case of Mrs. M'D—— we have an organic lesion of the brain developed during the eclamptic fits followed by hemiplegia, which eventually passes off, but leaves an impaired mental condition, which continues to manifest itself during the remainder of the woman's life. The beneficial action of soporifics in quieting the convulsive action was manifest in all of them. In all of them, and in none more so than in the case of Mrs. J——, the diuretic action of lemon juice was well marked.

CURRENT TOPICS.

REMARKS BY MEDICAL OFFICER, TO ACCOMPANY MORTALITY TABLES OF THE CITY OF GLASGOW.—The following quotations from the report for the quarter ending 30th September, 1881, may interest our readers:—

JULY, 1881, was slightly colder and considerably wetter than usual. The mean of the highest daily temperatures recorded was $63^{\circ}7$ F., the mean of the lowest $52^{\circ}1$ F. The general death-rate was lower than the average by fully 5 per 1,000 living. The death-rate of children below five years was lower than the average by no less than 33 per 1,000 living.

AUGUST, 1881, was cold beyond all precedent, and somewhat wetter than usual. The mean of the highest daily temperatures recorded was $61^{\circ}1$ F.; the mean of the lowest $47^{\circ}9$ F. The general death-rate was lower than the average by fully 2 per 1,000 living. The death-rate of children under five years was also lower than the average by 19.

SEPTEMBER, 1881, was of average temperature, but drier than usual. The mean of the highest daily temperatures recorded was 60° F., the mean of the lowest $46^{\circ}2$ F. The general death-rate was lower than the average by 3 deaths per 1,000 living. The death-rate of children below five years was lower than the average by 14 deaths per 1,000.

The average death-rate of Glasgow in the third quarter of the year for ten years is 24.6. For 1881 it is 21. The death-

rate below five years was $87\frac{1}{2}$ on the ten years' average, and 65 in this quarter. The mean temperature of the quarter was $1^{\circ}4$ lower than the average of ten years ($55^{\circ}1$ F. and $56^{\circ}5$ F.), and the rain-fall was $\cdot61$ of an inch less ($11\cdot42$ and $12\cdot03$ inches).

Compared with the other seven "Principal Towns" of Scotland (the mortality of whose entire population was at the rate of $17\cdot4$ per 1,000) the death-rate of Glasgow for this quarter was lower than that of Paisley.

Typhus.—Epidemic declined in Leith. Sporadic deaths in all towns except in Paisley and Perth, where there were none. *Enteric Fever*—sporadic deaths in all towns. *Small-pox*—one death in Leith, Perth, and Edinburgh, all adults. *Scarlet fever*—no deaths in Perth, but in each of the other towns more or less fatal, though not epidemic. *Measles*—as in last quarter, no deaths in Dundee, Greenock, Leith, or Perth. Epidemic in Paisley. *Whooping-Cough*—very fatal in Perth, where it was the only children's infectious disease which caused death, and yet it contributed 11 per cent of the total mortality. The proportion of the total deaths in the "Principal Towns" contributed by these three Infectious Diseases of Children was, over all, $6\frac{1}{2}$ per cent; and in Perth, 11 per cent; Edinburgh, 9; Paisley, $8\frac{1}{2}$; Aberdeen, 7; Glasgow, $6\frac{1}{2}$; Dundee and Greenock, $3\frac{1}{2}$; Leith, 3.

Compared with "Twenty large English towns" (the mortality of whose entire population was at the rate of $20\frac{1}{2}$ per 1,000), the death-rate of Glasgow for this quarter was lower than that of 6, including Liverpool, $25\cdot3$, and Manchester, $21\cdot6$. The death-rate of London was $20\frac{1}{2}$.

Fevers—nowhere epidemic or even prevalent. No deaths in Oldham. *Small-pox*—much less fatal in London, but there alone this disease retains its hold. Liverpool, Brighton, Oldham, Bradford, Leeds, Hull, and Newcastle-on-Tyne, return deaths ranging from 12 to 1 in number. *Scarlet Fever*—unusually severe; epidemic in Hull, where it added nearly 6 to the death-rate, or fully 22 per cent of the total mortality. Epidemic also in Nottingham and Leicester. No town entirely free. *Measles*—epidemic in Liverpool, where it added $1\cdot7$ to the death-rate, or $6\cdot7$ per cent of the total mortality. No deaths in five of the towns. *Whooping-cough*—most fatal in Leicester and Birmingham, but in general shows usual autumnal decline. The proportion of the total deaths in the twenty towns contributed by these three infectious diseases

of children was $8\frac{1}{2}$ per cent. The proportion in the 10 largest was—Nottingham, 13 per cent; Liverpool, $12\frac{3}{4}$; Birmingham, $9\frac{3}{4}$; Sheffield, $9\frac{1}{2}$; London, 8; Bradford, $7\frac{3}{4}$; Salford, $5\frac{3}{4}$; Leeds, $4\frac{1}{2}$; Manchester, $4\frac{1}{4}$.

Compared with 21 European cities (the mortality of whose entire population was at the rate of 29 per 1,000), the death-rate of Glasgow was less than that of all except four. The death-rate of St. Petersburg was 48, of Berlin 34, and of Paris $27\frac{1}{2}$.

Fevers—though much less fatal in St. Petersburg than in last quarter, still contributed 9 per cent of the total deaths, and added nearly $4\frac{1}{2}$ per 1,000 to the death-rate. In other towns very moderate mortality. *Small-pox*—though less fatal, still prevalent in Vienna, Buda-Pesth, Paris, and St. Petersburg. *Scarlet Fever*—present, but not very fatal in most towns, except St. Petersburg. *Measles*—nowhere prevalent. *Diphtheria*—very fatal in Paris, Berlin, and St. Petersburg, contributing 3·8, 3, and 2 per cent respectively of the total deaths.

Compared with 6 American cities (the mortality of whose entire population was 31), the death-rate of Glasgow was lower than that of all.

Fevers—prevalent in Philadelphia, New York, and Cincinnati. *Small-pox*—still declining in fatality in New York and Philadelphia. *Scarlet Fever*—epidemic declined in New York, Brooklyn, and Philadelphia. *Measles*—only sporadic cases. *Diphtheria*—though less fatal than in last quarter, still enormously more fatal than in English or even European towns generally; caused $6\frac{1}{2}$ per cent of all the deaths in Baltimore.

In Scotland generally, so far as indicated by the "Registrars' Notes," there continues to be a remarkable absence of reference to infectious diseases. Until we come to the Southern Registration Divisions, only the three infectious diseases of children and diphtheria are referred to, with little or no fatality, except in the case of Kirriemuir, where 5 deaths out of 26 were caused by scarlet fever. In the Southern Divisions, however, several melancholy instances of local epidemics are noted; *e. g.*, in West District of Shotts "of the 14 deaths, 8 resulted from an epidemic of *Scarlet Fever*, which has prevailed since July"; in Uphall, "of the 59 deaths registered, 23 were caused by *Scarlatina*, which is still prev-

alent;" in Rutherglen 34 out of 92 deaths were caused by the same disease, or 37 per cent. In "Glasgow—Landward and Suburban," as reported on from month to month by the Registrar-General, there has been considerable prevalence of the infectious diseases of children, their conjoint mortality amounting to 11 per cent of the total deaths registered.

Diarrhœal Diseases afford, by their comparative prevalence in the third quarters of various years, a fair idea of the character of the summer. Not that heat and drought alone are engaged in their production, but without these the putrefactive processes which are their direct causes do not supervene, while with these the sanitary condition and general social and physical circumstances determine the effective range of the remoter influences of climatic action. The comparative local prevalence of diarrhœal diseases has, therefore, a certain sanitary significance. In Scotland generally the summer was cold and wet, and diarrhœal diseases contributed but little to the mortality, for example, as compared with their quota in the third quarter of 1880. In that year they accounted for $8\frac{1}{2}$ per cent of the deaths in the eight towns, and in this only $4\frac{1}{2}$. Then Dundee stood highest with 10·7 per cent, and Paisley lowest with 6; whereas now Paisley stands highest with 7 per cent, and Edinburgh lowest with $3\frac{1}{2}$ per cent; Glasgow having 9·3 per cent in 1880, and 4 per cent in 1881.

In England, the unprecedented heat of July, though tempered by the cold of the succeeding months, left its mark in a diarrhœal mortality, which is high, but not nearly so high as that produced by the more prolonged though more moderate heat of 1880. The proportion of the deaths from diarrhœal diseases in the twenty towns was 11 per cent in 1881, against 19 in 1880. In both years Leicester stands highest as usual, but in 1880 with 36 per cent, in 1881 with 20 $\frac{1}{2}$. Bristol, which was lowest in 1880 with 12 per cent, is in 1881 the lowest (excepting Plymouth, 3·6) with 5·7. In the other towns there is a corresponding difference.

On the Continent and in America the fatality of diarrhœal diseases was very great, especially in the larger cities, being by far the most fatal of all classified causes of death. Estimated as a death-rate, they alone produced nearly 11 per 1,000 in Berlin, 10 $\frac{1}{2}$ in St. Petersburg, and 10 in New York; or 32, 21 $\frac{1}{2}$, and 27 $\frac{1}{2}$ per cent of their respective total deaths.

Of the deaths under one year, in only 79 per cent was the

cause of death certified; of the deaths one and under five years, in 92 per cent; of the deaths above five years, in 95 per cent. There was therefore no proof of medical attendance having been obtained for 21 per cent of those who died under one year, for 8 per cent of those who died one and under five years, and for 5 per cent of those who died above five years.

Of the deaths under one year, 25 per cent were in friendly societies; of the deaths one and under five years, 52 per cent; of the deaths above five years, 49 per cent.

Of the children who died under one year 20 per cent, and of those who died one and under five years 7 per cent, were illegitimate.

Of the legitimate children who died under one year, 81 per cent were certified, while of the illegitimate children, 70 per cent were certified. There was therefore no proof of medical attendance having been obtained for 19 per cent of the legitimate, and for 30 per cent of the illegitimate, children who died within their first year.

Of the legitimate children who died one and under five years 93 per cent were certified, while of the illegitimate 78 per cent were certified. There was therefore no proof of medical attendance having been obtained for 7 per cent of the legitimate, and 22 per cent of the illegitimate, children who died between their first and fifth years.

As compared with the corresponding quarter of last year, there is a decrease of 250 deaths. This decrease is manifest in all the zymotic diseases, including the diarrhoeal. The infectious diseases of children were 37 per cent less fatal, the fevers 44 per cent, and diarrhoeal diseases 61 per cent.

REVIEWS.

An Index of Surgery, being a concise classification of the main Facts and Theories of Surgery, for the use of Senior Students and others. BY C. B. KEETLEY, F.R.C.S. London: Smith, Elder, & Co. 1881.

THIS work must not be confused with the little books designed for the purposes of "cram," of which the medical press has in recent years been so prolific. No doubt it bears

a superficial resemblance to them, but its scope is wider, its aim more legitimate, and its execution more scientific. The author has endeavoured to condense into the smallest possible compass all the known facts and the most accepted theories of surgery, and so to produce a work of reference for the practitioner as well as a *résumé*, which may be of use to the senior student; if he has not been completely successful in this endeavour it is because the project was too ambitious, not because he lacked either the knowledge or the perseverance necessary to the task. As the title implies the subjects are arranged in alphabetical order; but so many affections are grouped under one heading that it is frequently difficult to find the article required; thus "Caries" and "Necrosis" are not found under their initial letters, but under the heading, "Bones, Diseases of," while on the other hand "Cancer" is separated from the section on "Tumours," and is found under its initial letter. With like inconsistency "Nævus" is grouped with "Tumours," but "Hip-disease" has an independent description and is not referred to under "Joints, Diseases of." No doubt a perfect classification is unattainable, as well as being rather beside the purpose of the author; but we would suggest that the value of the book would be much enhanced by more numerous "cross-references," or, what would be still better, by a full and complete index, although no doubt an index to an "Index" would sound something like a paradox.

Mr. Keetley is an enthusiastic disciple of Lister, and he takes the opportunity in discussing the subject of wounds to combat the arguments of those who oppose the antiseptic treatment. We have seldom read so concise, clear, and intelligible a description of the ends to be gained by Listerism as that here given, and we cannot withhold our approval from the author's rather indignant protest when he says, "Repeatedly, of late, have the student and practitioner been invited to deprive themselves and their patients of the safeguards offered by modern science on the strength of a comparison between the statistics of *two places only*. Such a comparison no more furnishes an argument against Listerism than the security of those Arcadian farmers who had 'neither locks to their doors nor bars to their windows,' condemn the use of the Metropolitan police."

The surgical practice is, generally speaking, well up to the present date, and we find reference made to the use of bone drainage-tubes, to litholapaxy, excision of the larynx, osteotomy for knock knee, and many other modes of procedure

still looked on as novelties in surgery. In a work of this nature it is too much to expect that all such new methods of treatment should find a place, and it is probably for this reason that we find no mention made of the use of wire sutures in the treatment of fractures of the patella and olecranon, of nerve-stretching in neuralgia, tetanus, and sciatica, of the primary or secondary suture of divided nerves, and of the radical treatment of the sac in cases of strangulated hernia.

It is pleasant to find so free and cordial an acknowledgment of the work done by our Glasgow surgeons as is herein accorded, for it is seldom in a book written by a London surgeon, that anything accomplished north of Manchester receives recognition, or if Edinburgh surgeons are happy enough to be remembered, their Glasgow *confrères* are too commonly altogether forgotten.

The Principles of Myodynamics. By J. S. WIGHT, M.D. New York: Bermingham & Co. 1881.

THIS little work treats of the application of the principles of dynamics to the action of the muscles of the human body. The author has endeavoured to free the subject as far as possible from technicalities, and so to fit it for perusal by those who have only a rudimentary knowledge of higher mathematics; in attempting this, however, he has been led into an unnecessary and confusing repetition of identical statements in relation to the several orders of lever, which in some measure defeats the end he has in view.

Although it has long been recognised that the supinator longus is chiefly operative in producing flexion of the forearm during supination, we have probably not yet learned to appreciate its full importance as a flexor, and it is therefore interesting to notice that according to Dr. Wight's observations the supinator would, from its mechanical arrangement, be three times as powerful as the biceps, if the section of the two muscles had the same area. Even after allowance is made for the greater breadth and thickness of the biceps it appears that the supinator has still greater power in producing flexion.

We notice some inaccuracies with regard to the action of certain muscles, as for instance where the author speaks of the sterno-mastoid as a *flexor* of the skull on the vertebral column;

this it could only be if its cranial attachment was situate in front of the transverse axis of the occipital condyles, while a reference to the skull will convince any one that it lies behind that line, and the muscle consequently is an *extensor*. We must also take exception to the statement that the biceps of the arm is in any measure whatsoever a pronator; nor can we agree with the assertion that all the extensors of the wrist are also extensors of the forearm, for none of the short extensors of the wrist pass over the elbow, or can at all influence that articulation.

We trust Dr. Wight will show more fully than he here does, in a future work, the way in which the muscles act in the production of displacement in fracture, a subject of much interest and not a little practical value.

Manual of Dental Surgery and Pathology. By ALFRED COLEMAN, L.R.C.P., F.R.C.S., L.D.S. London: Smith, Elder, & Co. 1881.

MANUALS of dental surgery and pathology are so rare comparatively, that a new work from the pen of such a well known practitioner and lecturer as Mr. Coleman must of necessity be received with great pleasure by both practitioners and students—by practitioners, because they can refresh their memories by the perusal of Mr. Coleman's thoroughly practical pages; and by students, because his style is so plain, concise, and to the point that to the dullest mind the facts can scarcely fail to be brought home. The book is not the formidable volume that so often strikes terror to the breast of the timid student, nor is it so small as to suggest that it is trifling; in fact, it is properly described as a manual. The first two chapters are devoted to dentition, which Mr. Coleman has treated in a most efficient manner; and much that he insists upon as necessary for the prevention of after trouble would be very valuable information to put into the hands of every thinking parent, teaching them to perceive the absolute necessity of frequent examination of, and careful attention to, the state of the mouth during the shedding of the deciduous and the eruption of the permanent teeth. He also lays great stress upon the state of the mouth in cases of nervous derangement in children; this, we think, is of the utmost importance, and medical practitioners might save themselves much trouble by causing the mouths of patients suffering from nervous trouble to be examined by a dentist.

The theory advanced by Mr. Coleman on the mechanism of eruption of the teeth—that there is “a general growth and advance of bone towards the surface, the surface being the seat of continual absorption”—requires corroboration; and we are inclined to think that, till this corroboration is forthcoming, we must look upon the theory with suspicion, although it opens a wide field for investigation to the scientific members of the profession. Mr. Coleman next writes of the irregularities of the teeth: he has given many engravings of cases and of the appliances used in bringing about an improved state of matters, and from his lengthened connection with hospital practice, and the many opportunities he has had of observing and treating every possible form of irregularity, his words ought to be read with much attention and appreciation by every one into whose hands the book may come—we are sure they will be benefited by them. About a fourth of the whole work is devoted to caries, its causes, prevention, and repair. In these chapters Mr. Coleman, although he has treated the subject in a masterly manner, has given us nothing new. Beginning with the theory of decay advanced by John Hunter he ends with that of Leber and Rottenstein, “who advocate the view that the disease is mainly due to the presence of the leptothrix.”

The opinions of Bell, Robertson, John Tomes, C. S. Tomes, Magitot Wedl, Salter, Bridgeman and Spence-Bate are given, but Mr. Coleman's opinion accords with the theory of John Tomes—*i. e.*, the chemico-vital, which, in our opinion, appears, so far as has yet been demonstrated, to be the most feasible. The treatment and repair of dental caries is, as must be expected in a work on dental surgery, one of the most important subjects, and Mr. Coleman, in the 72 pages devoted to it, makes the most of his opportunity. He appears to miss nothing, every appliance used in ancient or modern times for the repair and preservation of the teeth is noticed; and if one could find any fault at all it would be that the illustrations given in these chapters are too profuse, many being, as we think, better fitted for a dental manufacturer's catalogue; however, this is an error in the right direction. Three chapters are devoted to extraction, and after a careful perusal we feel very well satisfied with the advice and directions given by Mr. Coleman. To only one proposition which he makes we would take exception, and that is, to his opinion that in extracting an upper molar the “correct” movement to commence with is an inward one. Looking at the thickness of the alveolus in which the palatine fang is embedded, the

length of the fang and the thinness of its neck, we are inclined to favour an outward movement to begin with, as being much less likely to cause fracture of the palatine fang which, when it is broken well up in the alveolus, is often pretty difficult to dislodge. As was to be expected, the difficulties and complications of extraction are gone into in a thoroughly complete style, and we are sure no one can read this chapter without being benefited.

Chapter XIV is devoted to anæsthesia. Mr. Coleman goes into the history of anæsthetics in connection with dentistry, and he writes of the many appliances used in the administration of ether, chloroform, nitrous oxide, &c. Nitrous oxide being, of course, the agent to which attention is principally directed; but as our opinions in regard to the indiscriminate administration of anæsthetics for dental purposes are rather marked, we will say nothing further than that Mr. Coleman has said the little he has to say in his usual incisive manner.

In chapter XV the subjects of replantation and transplantation are treated of, and Mr. Coleman quotes a case spoken of in a paper by one Mitscherlich, of Dupont, who, in 1633, on account of violent pain, extracted and replanted a tooth, which became firmly attached. In replantation, unless in the case of accident, we have no faith, although in several cases where sound teeth have been accidentally removed, we have replaced them with invariable success. Yet we do not believe in the probability of success in cases where the tooth requires to be extracted, put into a vice, filled, and then replaced, even supposing that we could get patients to submit to the torture.

Transplantation now-a-days is utterly out of the question, so it may be looked upon as a curious experiment of our forefathers, and in connection with the subject I may quote the words of Ambrose Parry, in a work published at Paris, 15th February, 1579:—"I heard it reported by a credible person that he saw a lady of the prime nobility, who instead of a rotten tooth she drew, made a sound tooth, drawn from one of her waiting-maids at the same time, to be substituted and inserted, which tooth in process of time, as it were, taking root grew so firm that she could chew upon it as well as upon any of the rest."

Chapters XVI to XX are devoted to diseases of the gums, salivary calculus, dentigerous cysts, necrosis of the jaws, and diseases of the antrum, the various symptoms and treatment of which diseases Mr. Coleman puts plainly before his readers, and although he advances nothing new a careful perusal will

be well repaid. The work is concluded by a short chapter on "Nervous and muscular affections dependent upon dental irritation," which we wish had been much longer, as it is a subject of very great importance to every practitioner. On the whole, we are glad to be able to congratulate Mr. Coleman on his work, which we are sure will be received with the greatest pleasure by the dental profession.

Koumiss; or, Fermented Mare's Milk, and its Uses in the Treatment and Cure of Pulmonary Consumption and other Wasting Diseases. With an Appendix on the Best Methods of Fermenting Cow's Milk. By GEORGE L. CARRICK, M.D., Physician to the British Embassy at St. Petersburg, &c. Edinburgh and London: William Blackwood & Sons. 1881.

THOSE who are in want of information as to the Koumiss cure of consumption would do well to procure Dr. Carrick's work. From the brief history of Koumiss and its literature, with which the volume commences, it is apparent that this, like so many other modern methods of treatment, is merely a revival of an old method which, however, had never obtained a strong footing in the practice of physicians. The credit of having been the first to estimate the dietetic and therapeutic value of Koumiss belongs to Dr. John Grieve, a Scotch surgeon in the Russian army, who, in the year 1784, sent a communication on the subject to the Royal Society of Edinburgh. It was not, however, till the year 1858 that any establishment was erected for the treatment of cases of wasting diseases by Koumiss; but since then the number of patients who have had recourse to the Steppes has been so great that there are now many such institutions.

From the various analyses given, it is shown that mare's milk approaches much more closely in character to woman's milk than does the milk of the cow, from which it differs mainly in possessing less fat and casein, but in a more easily assimilable condition, and more milk-sugar. When fermented it is called Koumiss, which "is a thin, homogeneous, white fluid, which differs in appearance from mare's milk by small bubbles, like those seen in soda water after it has stood a while, bursting on its surface, their number being greatly increased on agitating the fluid. It has a pleasant, sweetish, acid taste,—the latter decidedly predominating,—and leaves on the tongue a curdy, or rather creamy flavour. It reminds one

somewhat of buttermilk, only that it is more tart, while the creamy after-taste is not so decidedly pronounced." According to the method by which it has been prepared, and the time it has been kept, it varies greatly in strength,—i. e., in regard to the quantity of its alcohol, lactic acid, and carbonic dioxide. Hence, also, its physiological effects vary. These are fully discussed in the work before us, as is also its therapeutic action. The most striking of its effects in consumption and other wasting diseases is the rapid manner in which lost flesh is regained, and the remarkable improvement in the outward appearance and spirits of the patients.

Wherever defective nutrition and assimilation exist a course of Koumiss proves beneficial, being the most digestible food that could be employed. The author, however, holds that it has a more specific action in albuminuria, diabetes mellitus, and phthisis pulmonalis. With regard to the first two of these, he cannot speak from personal observation, and his remarks thereby lose in weight. We are rather disposed to think that he has formed an exaggerated opinion of the success with which these diseases have been treated by this method, partly from the fact that he bases his theory of its usefulness in diabetes, to some extent, on the "very successful" skim milk treatment of that disease, and partly because his data are too meagre. What he urges in its favour, however, ought to secure Koumiss a fair trial.

With regard to pulmonary phthisis, the author can speak with more confidence, and he states his case so temperately that his conclusions are deserving of careful consideration. The number of temporary or permanent recoveries from all stages of advancing phthisis which he records, is probably larger than most physicians could bring forward. Of course, Dr. Carrick does not underrate the influence that change of climate had in these cases. So far as his own observations extend, he considers it "absolutely necessary that the Koumiss cure in consumption should be associated with a residence of from two to three summer months at least in the Steppes." Such a statement, taken together with the fact that, in our colder climate, the large consumption of Koumiss necessary in this disease is impossible, is disappointing, as it limits the application of this treatment to those who can afford a journey to Eastern Russia. The climatic influence, however, is not necessary in other diseases, and Koumiss may therefore be tried in them with more hopefulness. Such a trial is now being made, as may be seen from reports in various medical journals. In order that it may be a fair one, it will be

necessary to follow the instructions laid down by those who have personal experience of its value, and these will be found in full in this work.

Table II.—Of the average weight of the Body and Brain, and of several of the Internal Organs of the Insane at decennial periods of life in both sexes. London: J. & A. Churchill.

WE recently noticed Table I of this series and recommended that it should be hung up in every *post-mortem* room. The present table will find its place in the *post-mortem* rooms of our asylums.

The table is constructed on the same plan as No. I, but we have here besides a tabulation of the forms of insanity, which formed the basis of the table. There were altogether 974 cases, of which 558 were males and 416 females. The following notes may be interesting:—

“In comparing above Table with Table I at decennial periods, it will be observed that the weight of the body is greater in the insane, and that the left cerebral hemisphere is heavier than the right. The encephalon in males was slightly heavier in the sane; in females there was no difference in weight between sane and insane.”

“Note.—‘*Are Women inferior to Men?*’—In height the women were 4·3 inches less than men, the average height of men being 5 feet 6·7 inches, and of women 5 feet 2·4 inches. From Table II it appears that the weight of the body on the average of the whole was 22·9 lbs. less in women than men. The proportion that the encephalon bore to the weight of the body in men was one thirty-seventh, and in women one thirty-second,” &c.

REPORTS OF HOSPITAL AND PRIVATE PRACTICE.

GLASGOW ROYAL INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. WM. MUIR.

FROM DR. MORTON'S WARDS.

AMPUTATION OF BOTH FOREARMS—RECOVERY.—[Reported by Charles Buchanan Hunter, M.B., C.M.] J. C., æt. 31, was
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admitted to the Glasgow Royal Infirmary on the 1st of December, 1881, suffering from the effects of an explosion of gunpowder. While sinking a pit shaft, a rock required blasting, and as the charge seemed to hang fire, our patient went down to see what was the matter, and just as he arrived at the spot the explosion took place. On examining the patient it was found that all the phalanges and metacarpal bones of the right hand had been completely blown off—the carpal bones and lower ends of the ulna and radius presenting a rounded charred mass. The fingers and metacarpal bones of the left hand were shrivelled and charred, and hanging by the tendons from the exposed lower ends of the radius and ulna. Both forearms were bruised and infiltrated with gunpowder—the left being worse than the right. On the face there was a general infiltration of the grains of powder, with abrasions at some points, the eyelids suffering considerably. He did not suffer much from shock.

Brandy and beef tea were given after his admission, and Dr. Morton, who was soon in attendance, amputated at the middle third of the right forearm, and at the elbow-joint of the left arm. It was owing to the great laceration of the muscles of the forearm that amputation had to be performed so high up. The stumps were dressed with terebine lint—the patient to have brandy and beef tea, also half-a-grain opium every six hours.

9th December.—Seven days after the operation the temperature went up slightly, and he became somewhat delirious, but was soothed by a hypodermic injection of morphia.

11th December.—There is almost no discharge from the right stump, the dressing being only slightly coloured after 24 hours' standing; the left is still discharging to a slight extent, there being about three drachms of pus got away at the time of dressing. For two days before this the lids of the left eye were observed to be getting more swollen, the swelling of the right having completely gone. It gradually got worse, and five days afterwards the eyeball was excised.

16th December.—From this date the stumps quickly healed up, and he was dismissed on the 11th of January in good spirits—no ominous symptoms having occurred throughout the case.

From the nature of the accident, it is wonderful he escaped with so comparatively slight injuries.

WESTERN INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. W. G. DUN.

FROM PROFESSOR GEORGE BUCHANAN'S WARDS.

REPORTED BY MR. ANSTRUTHER DAVIDSON, M.B.

IN these notes there is a short account given of four cases of unusual surgical affection, all coming under observation in the month of January.

CASE I. FIBROID TUMOUR OF SEPTUM NASI.—J. S., aged 21, admitted 12th January. Growing from the septum nasi on each side was a firm, reddish, elastic swelling projecting down in front so as just to appear outside the *alæ nasi*, while its limits behind could not be ascertained. The swelling affected the whole cartilage uniformly, so as nearly to completely obstruct the passage on each side. It was slightly painful on pressure. There was slight purulent discharge from right nostril. The nose was much broadened. The commencement of the growth dated from two months ago, when he received a severe blow on the nose, causing it to bleed freely. From that time he began to feel as if the nasal passages were swollen, and in a week or so after the injury slight purulent discharge appeared from right nostril. There had been no pain during its growth, but the presence of the swelling gave him slight discomfort, and a disagreeable feeling of tenseness when he assumed the stooping posture. Breathing through the nostrils was somewhat impeded.

14th January.—Professor Buchanan, having determined to remove the tumour, put patient under chloroform, divided the columna at its base, and turned it up, then with probe-pointed bistoury divided the septum from its attachments above and below, the hæmorrhage meanwhile being very severe. To the part thus separated the ring vulsellum was applied, and the whole twisted away from its posterior attachments. On account of the hæmorrhage, the columna was not then fixed; iced water was injected, and the bleeding shortly ceased. Ten hours after the columna was fixed by sutures, and four days after he was dismissed, the wound having united by first intention. The nose already had diminished in size.

The tumour was examined by Dr. Steven, who reported as follows:—"It forms an oblong mass two inches long, rather more than one broad, half-an-inch thick. On either side it is covered with mucous membrane, and presents traces of a mesian

septum at its posterior part. Through an opening on one side a probe passes into the centre, where on section a ragged cavity is disclosed, quadrilateral in shape, and walled in by firm tumour tissue. Examination by microscope showed it to consist of well defined fibrous tissue, with here and there clumps of round cells in close relation to the blood-vessels, and in all probability inflammatory."

CASE II. EPITHELIOMA OF UPPER LIP.—A. S., aged 33, consulted Prof. Buchanan about an ulcer of the lip of which he gave the following history :—"Five years ago there appeared a small 'pimple' just to the left of the middle line and near labial margin which ulcerated, leaving a small sore which has ever since been slowly increasing." When he first came under observation in November the ulcer was the size of sixpence, unhealthy, and with hard indurated edges. He had suffered from gonorrhoea eight years ago, but the most exacting inquiry could not elicit any history of syphilis; nevertheless, he was put on anti-syphilitic treatment, and the ulcer was cleansed with an ointment of boracic acid in vaseline. Two months after he presented himself with the sore almost entirely healed, with red glazed appearance, but with edges harder and more indurated than before. This led Professor Buchanan to propose excision, which was accordingly done on 13th January, and in a week after he was dismissed well. Dr. Coats examined the tumour, and without any hesitation pronounced it to be an epithelioma of the glandular type.

Remarks.—Epithelioma of upper lip, by its spreading round the angle of the mouth from the lower lip is often seen, and it is not unusual to find it beginning on upper lip near alæ of nose, but its presence, as in this case, near red margin and almost in the middle line is rare. Another feature of interest is the man's age, 33; and when it first began, 28. That it was epitheliomatous in its nature from the beginning is scarcely in keeping with its slow progress at such an early age, or with the fact of the epithelioma being of a glandular and not the squamous type, knowing, as we do, how prone such are to infiltrate and spread deeply among the tissues. Had he had syphilis it might have been suspected to be one of those specific sores that Mr. Hutchinson considers apt to take on malignant action. Taking all circumstances together, it is most likely it was at first and for a long time simple, but afterwards becoming malignant.

CASE III. DERMOID CYST SIMULATING RANULA.—Jessie S., aged 21, came to the Infirmary as an out-door patient suffer-

ing from a swelling underneath tongue on each side the raphe, the greater half occupying the right side exactly in the situation of a ranula, which it resembled in form and consistency, but with a surface paler than a ranula usually shows. It was seized with forceps and a part cut out with curved scissors, when there exuded thick sebaceous-like matter; and Professor Buchanan recognising its nature at once excised it, the process being much facilitated by the floor of the mouth being pressed up by the hand of an assistant.

The tumour, of the size of a walnut, was found to be lined with a distinct greyish membrane, and entirely filled with a pultaceous material which microscopic examination showed to be wholly made up of flat epithelial cells in various stages of degeneration, and of oleaginous and fatty particles.

Three years ago she had felt a soreness below the tongue, and then discovered this swelling which, due probably to its slow growth, she had not before observed, though her parents had previously remarked a fullness beneath the chin. It was then as large as at present, and was lanced by a medical man, and a large quantity of this sebaceous-like matter liberated. She did not mention this till after the operation.

It soon filled, and has since been three times opened; on the last two occasions blood only escaped. At first it was limited to the right side, but after the last operation it likewise showed on the left.

Remarks.—Cases where, as in this one, the cyst in its structure and contents closely resembles an ordinary atheromatous cyst, but arising as a new formation in a situation where no sebaceous glands exist, have been placed by Lebert in the first division of dermoid cysts, and are worthy of note, as instances of such are rare—in the situation of ranulæ very rare. They are interesting not only on this account, but also in their so closely resembling ranulæ, apparently the only difference being in the colour of their surfaces. That it could have been an ordinary sebaceous cyst originating in the usual way, but pressing towards the mouth, is entirely negatived by the fact of the tumour being above the mylo-hyoid muscle.

CASE IV. EPITHELIOMA IN LOWER JAW.—Flora M'L., æt. 29, was admitted 10th January, having been sent from the country to have a tumour of lower jaw removed. Three years before she discovered a lump, about the size of a hazel nut, beneath the second bicuspid tooth of the right side, which she supposed was a gum-boil, though it was unaccompanied by any pain, nor was there any tooth diseased. It had since then

been gradually increasing in size. One year after the second bicuspid loosened and dropped out, not in any way decayed, and shortly after the first began to feel loose. When examined the second bicuspid was wanting, and the first was somewhat loose; all the others were firm, and not elevated or displaced from their normal position. The second molar alone was carious in the centre, and had been the seat of toothache more or less for last twelve months. The external surface presented a uniform swelling of the size of a walnut, extending from near the symphysis to the second molar tooth, and occupying the body of the jaw from the alveolar almost to the lower border. It was bony in consistency, except near teeth, where it was slightly elastic. On the internal surface opposite this the jaw shows slight convexity.

14th January.—Professor Buchanan having made an incision along lower border of jaw, excised the affected part from symphysis to second molar tooth, no part of base of jaw being left, as the tumour had implicated almost the whole body of it. She made a rapid recovery, with a useful jaw.

The tumour, which was situated in the centre of the bone, was entirely surrounded by bone, the outer and inner surfaces being expanded to a mere shell. It was of the size of a pigeon's egg, largest at its lower end, of very firm consistency, and almost completely filling the cavity, from the walls of which it was easily detached. The first bicuspid had been displaced obliquely, and to the root and lower border of fang the tumour was firmly attached.

Dr. Steven made a microscopic examination of it, and pronounced it to be a glandular epithelioma, probably arising from the mucous membrane. Dr. Coats confirmed the diagnosis.

Assuming it, then, to have arisen from mucous membrane, the supposition at once presents itself that it began in the tissue of the gum and spread downwards, an idea, however, not in keeping with the history nor conceivable from the anatomy of the parts.

Viewed in the light of its history and its morbid appearances, its origin from aberrant embryonic tissue seems the more likely explanation.

FROM DR. H. C. CAMERON'S WARDS.

CASE OF OVARIOTOMY.—Isabella K., unmarried, aged 28, was admitted 29th September, 1881. Her ailment began, about eight years previously, with a swelling in the hypogastric region, and according to her own observa-

tion, not more to one side than the other. From that date it went on gradually increasing in bulk until it filled the whole abdomen. Its growth was painless, and she was able to continue her domestic duties.

The following account of the case is extracted from the Ward Journal:—"Eighteen months ago her abdomen was tapped, and again in June last, and very large quantities of fluid were drawn off on each occasion. She is pale and somewhat thin, but states that she is in fair health. There is a large oval tumour occupying the whole abdomen. Its lower part is somewhat pendulous, and hangs over the pubes. The tumour is very tense, and of a uniform consistence throughout. A distinct wave of fluctuation can be communicated from one hand to another at almost any two points. Clear percussion is distinct in either lumbar region, while all the rest of the abdomen is uniformly dull."

20th September.—In the ward this morning Dr. Cameron withdrew some fluid from the tumour with canula and trocar for diagnostic purposes. After this tapping (several pints) the patient became pale and alarmingly faint, and complained much of severe pain in the epigastrium. In the course of half-an-hour or so she vomited a quantity of blood, and her pain ceased. She remained faint and ill, however, until evening, when she rallied, and was quite well again next day. She told us that exactly the same thing happened when she was tapped in June last.

30th September.—Dr. W. L. Reid examined the patient to-day, at Dr. Cameron's request, and states that the uterus is normal in depth, and either firmly adherent to the tumour or fixed by being pressed down into the pelvis.

12th October.—This morning Dr. Cameron opened the cavity of the abdomen and removed a large tumour partly solid, but in the main a single large cyst. The tumour was quite free, except at one part—viz., that occupying the right hypochondriac region, where there was a limited omental adhesion, which was ligatured with catgut and divided. The pedicle was narrow, and of considerable length. It was secured with a double catgut ligature, and the cyst separated from it by means of scissors. The incision in the parietes was closed by silver sutures. The operation was conducted under antiseptic spray, and antiseptic dressings were applied. Ether was used as an anæsthetic; and although patient had slight retching towards the close of the operation, there was no vomiting.

10.45 p.m.—On being first removed to bed, patient seemed

very well, but shortly passed into a faint, almost collapsed condition, which lasted about an hour. Her temperature was subnormal, and her pulse very thready. This condition was treated by raising the foot of the bed and administering stimulants. She also complained of severe pain, principally in the epigastrium, but this was much relieved by a half grain morphia suppository. During the afternoon and evening she has been quite free from pain, and has had a good deal of sleep. Between 2 and 3 P.M. she had two slight attacks of vomiting, but this has not recurred. The vomited matters consisted largely of altered blood, being of a "coffee-ground" colour. At 7.15 to-night her pulse was 88, and of fairly good strength; her respiration 22, and her temperature $100^{\circ}2$.

14th October, 10 P.M.—Patient had a very good night, and slept well. Her temperature this morning was 99° . During the day she has lain quiet, and suffers very little pain. There has been no recurrence of the vomiting, except when a little "essence of beef" was given about mid-day, which the stomach immediately rejected. Her diet has since been confined to iced milk and white of egg. To-night she is resting quietly. Her pulse is 100, and her temperature $99^{\circ}6$.

15th October, 10 P.M.—Continues well. Her temperature was $99^{\circ}4$ in the morning, and $99^{\circ}2$ to-night. She is quite free from any pain.

18th October.—Patient continues well. Her temperature during last three days has been about normal. She is entirely free from pain. Her food is still confined to milk and white of egg. The use of the catheter has been to-day discontinued by her nurse at her own request.

19th October.—Patient's temperature this morning ($99^{\circ}2$) being slightly higher than last night, it was thought advisable to change the dressing. The abdominal incision was looking very well, and had united throughout. As the sutures were not causing any irritation or inconvenience, they were not removed. Patient took some tea to-day for the first time since the operation.

20th October, 10 P.M.—Had some beef-tea to-day. Temperature has risen to-night to 100° without any apparent cause. The bowels have not acted since operation.

21st October.—To-day her bowels were moved by enema. Temperature lower than it has been during last three days. Wound was dressed to-day, and most of the stitches removed. A drop or two of pus had formed in the track of two of the stitches.

25th October.—Rest of stitches removed.

9th November.—Patient got up to-day for a little, and felt very well; but this evening her temperature has gone up to 102°.

18th November.—Patient has been getting up for a little every day without any bad effect.

29th November.—Patient to-day left the hospital for her home in the country.

Remarks by Dr. Cameron.—The only unusual and therefore very interesting feature of this case is the alarming syncope and collapse which occurred after each tapping, and also after removal of the cyst. On each occasion this was accompanied by great pain over the stomach and followed by hæmatemesis. There can be little doubt that these symptoms occurred as a consequence of the sudden relief of pressure by the withdrawal of fluid and the alteration which followed upon that of the circulation in the stomach. The occurrence seems comparable (as was suggested to me in conversation on the subject by my colleague Dr. Finlayson) with those grave mishaps which sometimes follow the removal of large pleural effusions by paracentesis. Sudden death occasionally occurs, presumably from the circulation being restored to portions of the lungs, where it has long ceased, and so even disturbing thrombi with fatal effect.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1881-82.

MEETING IV.—13TH JANUARY, 1882.

PROFESSOR GEO. BUCHANAN, *President, in the Chair.*

MR. A. ERNEST MAYLARD, B.S., read a paper "ON THE USES OF THE DOUBLE SPLINT IN AFFECTIONS OF THE HIP," and showed the splint. (See page 161.)

The President said that Mr. Maylard had brought a very interesting point in mechanical surgery before the Society. The first thing that occurred to him at the International

Congress in August last was, as compared with the treatment of surgical cases in Scotland, the extraordinary amount of complication in all the apparatus shown there. There was one point to be considered in every apparatus, and that was not only whether it was useful in hospital, but whether it could be applied to every case met with. He could see many points of value in this splint,—one was that it would keep the body more fixed,—but there were others to which he was opposed. He had given up the idea—both in theory and in practice—of using extension in fracture of the neck of the thigh bone and disease of the hip, if extension meant a continuous force pulling at the seat of the disease, or an attempt to pull out the limb to or beyond its real length. He did not think that you could extend the hip beyond a certain length, you could not pull it lower than the edge of the acetabulum. In the first stage of disease of the hip there was no fluid within the joint, and, until the second stage, when the ligaments and muscles were softened and relaxed, it was impossible either to shorten or lengthen the limb. What was called shortening or lengthening of the limb in hip disease was generally due to twisting of the patient's body. He agreed that the affected parts should always be kept at rest, but one can never get this by keeping the muscles constantly on the stretch. The muscles could not be at rest unless they were so stretched as to become atonic, and this, he did not think was desirable. In his wards he only used the perineal band until he got the limb into the position he wished it, and then he fixed the foot, leg, thigh, pelvis, and chest all on a long splint by means of sticking plaster. He did not think the essence of the treatment was tension, but rest. He thought this splint would be very useful if the tension were taken off. In the ordinary splint the trouble was not in the tension, but in the patient veering round on the splint, and the splint exhibited would be useful as keeping the pelvis level. He could not say that he had observed all the objections which Mr. Bryant urges against the long splint.

Dr. Patterson thought that the splint exhibited was a most ingenious one. The elastic band used in applying the extension was, from one point of view, superfluous. It is a variety of Hamilton's double splint. Those who have treated hip disease and fracture of the femur high up in children know the difficulty in keeping things in position. They wriggle from the splint in order to relieve the tension of the psoas and iliacus, and the result is an oblique union. If we put on a splint of this kind the pelvis would be kept flat. He thought

it a very neat and business like apparatus, but perhaps a little complicated.

Dr. Clarke thought that most surgeons had used Hamilton's splint in the treatment of fracture of the thigh in children, as it fixes both limbs, and takes the counter extension from the opposite limb instead of from the pelvis. It was a satisfactory apparatus because the patient could be kept flat in bed, could be easily moved or carried, and the evacuations could be readily removed, and dressings kept clean. These advantages also apply to the treatment of morbus coxarius. The idea of extension was to prevent the inflamed surfaces from impinging on one another, and thus give rest to the joint. Extension by a heavy weight, or by a foot-piece, hurt the patient, but he thought the elastic band a very easy way of applying extension. In the Royal Infirmary they sometimes did away with the perineal band, and got counter extension from the body band.

Dr. Hugh Thomson said he had devoted considerable attention to this subject. The principle of the apparatus he had devised was to have one which would so form a part of the limb that there was no extension from any one part, but from all parts. It was not an apparatus for extension so much as for the maintenance of the limb in its proper position. There was certainly a necessity for a counteracting force against the powerful muscles of the thigh, which caused riding, especially if the bone was broken obliquely, and this he obtained not by the ordinary perineal band, but by means of a crutch made to pass inside of the thigh and rest on the pubes and ischium. In this way he had the counter extending force applied in a direct line. He thought the upper portion of the splint shown was out of proportion with the rest of it. Another objection, he thought, was that it would keep the patient in too fixed a position, as it was of some consequence to have the knee slightly flexed and so relax the muscles. He thought the best apparatus was Ainsbury's fracture bed.

Dr. Renfrew said that he thought the splint shown was fitted to meet some of the defects in the present mode of treating disease of the hip joint. It would certainly prevent movement much better than the unilateral splint.

Dr. Kirk had seen a splint, similar to the one shown, used by Langenbeck and Volkmann in the treatment of double excision of the hip. He thought the brackets of the splint were rather small, and that they should be movable.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1881-82.

MEETING III.—13TH DECEMBER, 1881.

DR. HECTOR C. CAMERON, *President*, IN THE CHAIR.

DR. BARR showed a woman who was the subject of a PULSATING TUMOUR IN THE FAUCES. The patient was 42 years of age, and he saw her first at the Western Infirmary, when she complained of *tinnitus aurium* in the left ear of two years' duration, which interfered with her sleep, and was like the sound of water falling from a boiling pot. There was no defect of the hearing; sometimes the noise was not in the ear but in the head. The left pulse was weaker and smaller than the right, and the left pupil was slightly contracted. On examining the throat he found that there was a pulsatile swelling on the right side of the posterior wall of the pharynx, probably in the line of the ascending pharyngeal. He could not see how this condition had any direct connection with the sounds in the head, but he would infer that a similar condition existed in some of the intra-cranial arteries. (Patient was then shown.)

Dr. Finlayson raised the question as to the propriety of ligature as a method of treatment in the present case.

Dr. Clarke asked if there was any necessity for surgical treatment as far as danger or inconvenience to the patient was concerned.

Dr. Adams suggested that this might possibly be an abnormal arterial distribution, and mentioned that he had recently seen a case where the carotid of one side was absent.

Dr. Cameron thought that *Dr. Adams'* suggestion was a very good one. It was strange that all these aneurisms occurred in women.

Dr. McEwen thought that in the present case we had to deal with an enlarged artery, or an abnormal distribution.

DR. THOMAS REID showed a patient from whom he had removed an EPITHELIOMA OF THE RIGHT UPPER EYELID. The patient was an old man aged 68, and was admitted to the Glasgow Eye Infirmary on the 12th Nov. At that time the tumour occupied the greater part of the upper lid, extending downwards and encroaching upon the inner canthus. The disease had been first observed about 12 months before, when it existed as a small pimple on the inner canthus, and had gradually increased in size since that time. After removing

the tumour he restored the upper lid and the inner canthus by a plastic operation, the flap being taken from the forehead, and turned outwards from the root of the nose. (Method explained to the members with the aid of a diagram.) Dr. Reid also showed sections of the tumour which was found to present the characters of a glandular epithelioma, which was the form most commonly met with in this situation.

Dr. Clarke had recently operated on a rodent ulcer of both lids. In this case he required two flaps. The upper one was too thick, so that patient as yet could not open the eye very well. He thought it better to take the flap from the nose.

DR. REID showed another patient from whose eye he had removed A PIECE OF IRON BY MEANS OF AN ELECTRO-MAGNET. The patient was a lad aged 14, who had received a blow from a piece of metal on the left eye on the 29th Oct. Two attempts were made to extract the foreign body, but failed. On the 31st he was sent to Dr. Reid, who found the following state of matters:—There was a small wound at the inner aspect of the eyeball, with a cut on the edge of the lid. There was considerable inflammation, the pupil was dilated, a clot was seen behind the lens, and there was metallic reflection at the lower part of the fundus. An electro-magnetic apparatus was put into order, and the needle introduced through the wound. The first and second attempts failed, but on the third a click was heard. On attempting to withdraw the piece of metal it became entangled in the wound and was not removed. A shorter needle was then used, and by means of it the foreign body was made to project a little from the wound, when it was easily removed by the forceps. Sedatives were then administered: acute orbital cellulitis set in, which was treated by the application of ice. Then pus filled the eyeball, which was absorbed, and the coats softened, afterwards becoming cicatrised.

DR. REID then alluded to the points of interest illustrated by the present case, and to the difficulties experienced in constructing proper electro-magnets for the treatment of injuries of the eye. He referred at great length to the physical laws regulating the use of electro-magnets, and showed that the great difficulty was to taper down the needle and yet allow of its projecting beyond the point sufficient attractive force. It has been found that a needle with a conical hollow point is the best form. The strength of the instrument depends upon the thickness of the core, the number of turns of wire round it, and the thickness of the wire. The object in view

should be to get an instrument of sufficient power, and yet one easily handled. (A number of eyes were provided, containing metallic fragments, and the members had an opportunity of testing the electro-magnets upon them.)

Dr. Clarke had a case where a piece of iron was impacted in the anterior chamber, and where he managed to extract it at the second attempt with the electro-magnet, after failing in doing so by forceps.

DR. M'EWEN showed specimens of *TRICHINA SPIRALIS* removed from the body of a man who had been brought into his wards suffering from the effects of a severe blow upon the abdomen. The chief symptoms observed were abdominal pain, stercoraceous vomiting, constipation, and dysuria. He seemed to recover pretty well at first. It was noted that he lay very stiff in bed, was always stretched out, and seldom moved his head. He complained of great thirst, but would not take the water himself when it was brought to him. At the *post-mortem* all the muscles were found to be studded over with minute white specks like sawdust—the trichinæ. No adults were found in the intestine, but he thought he had discovered free larvæ wandering through the muscle. If it were so, then there was reason to suspect that the case was a recent one. The history then made out was as follows:—Five years ago he was a sailor, and until five months before his admission had remained quite well, when he began to suffer from vomiting, without diarrhœa. This seems to have prevented him from working. No reliable information as to diet could be obtained, except that he ate everything he got, and drank heavily, after which he used to indulge in raw salt ham.

Dr. Mackellar gave details as to the *post-mortem*. He found peritonitis like that occurring in old persons. There was nothing in the heart. There were white specks in the kidney due to deposits in the tubules. The ventricles of the brain were greatly distended, so that it may have had something to do with the cause of death.

Dr. Coats had examined the muscles. Till to-night he had thought that the case was not a recent one, and if such changes, as those in the present case, could occur within five months, then it was very important, because it was not generally believed. Many of the capsules of the trichina were collapsed with fat near them, and all were calcified. So that for these reasons he thought the case might be an old one.

DR. J. LINDSAY STEVEN showed microscopic specimens ILLUSTRATIVE OF THE PRESENCE AND EFFECTS OF MICROCOCCI IN THE KIDNEY. The present series of specimens were interesting for two main reasons—(1) The organisms were situated in the tubules, and not in the blood-vessels as is usually the case; and (2) because they were very obviously derived from the external air. The case was one of perinephritic abscess of the left side, which had been under treatment for a lengthened period in Dr. Gairdner's wards. The abscess at the *post-mortem* was found to communicate in a remarkable way with the right ureter. Some time before death the abscess was opened antiseptically, but could not be kept so. A direct communication between the right kidney and the external air was thus established. The organisms had made their way up the ureter, and then into the uriniferous tubules, where they set up acute interstitial nephritis leading to multiple abscesses.

DR. E. D. MACKELLAR exhibited the COLLECTION OF SPINES MADE BY THE LATE DR. FOULIS, and made remarks explanatory of his (Dr. Foulis) views on the subject. There were three main points to be learned from the collection now shown to the Society:—(1) That there might be very great deviation of a spine, which during life appeared to be normal; (2) That there might be great deviation, and even disease, in a spine, without any indication in the spinous processes; and (3) That when there was much lateral curvature the edges of the bodies of the vertebræ threw out buttresses on the concave side, apparently as a counteracting support. It also seemed to be his opinion that a slight convexity to the right in the dorsal region, though a frequent, was not a constant deformity, and that different lateral curves were caused by different occupations.

M E D I C A L I T E M S .

UNDER THE DIRECTION OF
ALEX. NAPIER, M.D.

Subcutaneous Injection of Mercury.—M. E. Callamand discusses shortly the history of this mode of administering mercurials, and points out that the first preparation so used (by Scarenzio, of Pavia) was calomel in suspension in

glycerine. Though this preparation has a very severe local action, causing great pain and frequently abscesses, it is still preferred by Sigmund, of Vienna. Lewin, of Berlin, uses the perchloride thus:—

Perchloride of mercury,	40 centigrammes.
Chloride of sodium, .	5 grammes.
Distilled water,	40 "
Hydrochlorate of morphia,	20 centigrammes.

In 1876 Bamberger, of Vienna, proposed to use the white of egg and chloride of sodium, and thus to form a soluble albuminate of mercury. Six months later he replaced the albumen by peptone, forming a peptonate of mercury. Cullingworth, in England, and Professor Pick, of Prague, recommended the bicyanide of mercury for subcutaneous injection, giving for each dose one ctgr. dissolved in one cubic centimetre of distilled water. Pick subsequently employed another solution, of which he spoke highly, in which corrosive sublimate, peptone, and iodide of potassium were combined. M. Terrillon made use of the following preparation:—

Binioidide of mercury,	. . . 1 gramme.
Iodide of potassium,	. . . 1 "
Tribasic phosphate of soda,	. . . 2 "
Distilled water, sufficient to make	50 cubic centimetres.

M. Luton, in 1880, showed the possibility of introducing metallic mercury into the system subcutaneously, either alone or emulsified with glycerine. Finally, M. Martineau introduced the ammoniated mercuric peptone, the solution of which contains 10 milligrammes of corrosive sublimate in each cubic centimetre. The formula for its preparation is as follows:—

A concentrated solution, called the standard solution, is first prepared.

Peptone in powder (Catillon's)	9 grammes.
Pure chloride of ammonium,	9 "
Corrosive sublimate, . . .	6 "
These are dissolved in	
Pure glycerine, . . .	72 grammes.
Distilled water, . . .	24 "

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Five grammes of this standard solution, filtered, contain exactly 25 ctgr. of sublimate, and this, diluted with 25 grammes of distilled water, gives a hypodermic solution containing in every syringeful (1·20 grammes) 10 mgr. of sublimate. This

solution has to be renewed frequently, nearly every day, as it changes rapidly. M. Martineau affirms that he has never seen the slightest local trouble when using this solution, and that it causes neither pain, abscess, sloughs, nor inflammation; the nodular swellings sometimes observed are the result of *intra-dermic* injection, and they soon disappear. The needle must be sharp and perfectly clean, and must be pushed well *beneath* the skin, the puncture being made in a situation where the cellular tissue is lax and abundant, as in the dorsal region or on the buttocks. At first M. Martineau gave a dose of only 1 mgr. of sublimate in this way, but he soon increased it to 10 mgr., which is a perfectly safe dose. It has never produced salivation, stomatitis, or any other sign of mercurialism. As regards its effects in syphilis, it is said to act much more promptly and decidedly than the same quantity of the drug given by the mouth or by inunction. In dealing with patients predisposed to gastro-intestinal affections, with anæmic, phthisical, arthritic, or scrofulous subjects, the hypodermic method has advantages over every other mode of administration. The stomach is sometimes perfectly intolerant of mercurial preparations, and inunction is resorted to with repugnance; in such circumstances injections are of great value. M. Martineau quotes such a case, in which the patient, suffering from a grave form of syphilis, could not take the smallest dose of any mercurial preparation without being attacked by stomatitis; injections were here well borne, and at the twenty-fourth all pain, ulceration, and fever had disappeared, and there had been no trace of stomatitis.—*Journal de Thérap.* 25th January, 1882.

Albuminate of Mercury given subcutaneously in the Treatment of Syphilis.—Dr. O. Gourgues, like the writer last quoted, begins his paper by recounting the history of this mode of using mercury in syphilis. He then condemns the *peptonate* of mercury as an unreliable preparation, and writes favourably of the *albuminate*. He states that Bamberger was one of the first to use albumen in his solutions, and that he did so on the following theory:—When a mercurial solution is introduced into the economy by the hypodermic method the mercury passes into the circulation only after having been fixed in an albuminous coagulum and then dissolved in the alkaline chlorides of the tissues, a process sometimes attended by much local irritation and inflammation, and sometimes abscess. If, then, the salt of mercury be administered in combination with albumen, already in solution in an alkaline

chloride, the general effect of the drug will be rapidly produced, the solution passing at once into the circulation without having to undergo any previous transformation, and causing therefore little or no local irritation. Bamberger's *peptonate* of mercury [not the *ammoniated* preparation referred to in the last *item*] has not given good results in the hands of the author; its action on syphilitic affections was decided enough, but it invariably gave rise to painful local indurations, and sometimes to sloughing. The solution, which the author has found the best, is the following:—

- Perchloride of mercury, 1 gramme.
- Distilled water, 20 "
- Dissolve; add the white of one egg mixed
with a little distilled water, making in all, 20 "
- Stir the precipitate which is formed, and
add a solution consisting of—
- Chloride of sodium, 2 "
- Distilled water, 60 "

Stir the mixture and filter; weigh the filtered liquid and add to it enough distilled water to make it up to 130 grammes.

This solution contains 1 ctgr. of albuminate of mercury in 130 grammes of fluid; it is not absolutely transparent, but is slightly iridescent. It keeps better than most such solutions: at the end of a week it will be found to have undergone no appreciable change. Should any albuminous flakes appear in it they should be filtered out. Dr. G. has injected this solution into the parts about the gluteal region, the sacro-lumbar region, and into the back, and has never had to deal with any local inflammation or any other local accident. The injection was given every four days, and in no case was salivation excited, the gums invariably remaining healthy. It was long ago noticed by Gubler that much depends on the site of the injection; the buttocks or the back should be preferred, not only on account of the abundance of cellular tissue in these parts, but because they are supplied with comparatively few vessels and nerves; their temperature is lower than that of the rest of the body, and they are less apt to take on inflammatory action. The needle also must be made to penetrate exactly to the subcutaneous cellular tissue. Dr. G. gives details of 26 cases of syphilis in which treatment by means of the foregoing solution yielded the best results, and he concludes by formulating his views on this subject in the following sentences:—

1. The *peptonate* of mercury is an unreliable preparation, often giving rise to local accidents. It is necessary in

preparing it to use always the same quality of peptone in order to obtain a uniform product. The solution decomposes very speedily.

2. The *albuminate* of mercury, prepared according to the formula above given, is easily and painlessly administered if the precautions already indicated are observed. These injections do not involve the slightest danger of local inflammation.

3. The therapeutic effects of this mode of treatment are remarkable; six to eight injections usually produce rapid amendment in secondary syphilitic manifestations.

4. The gastric and buccal complications often attending ordinary mercurial treatment have not been observed under this mode of administration; they did not occur in any of the 26 cases above referred to, and gastric and intestinal irritation were excited in only one instance, the case of a woman who was pregnant.

5. The quantity of albuminate absorbed throughout the course of treatment amounted, on an average, to 8 to 10 ctgrs.

6. Under this mode of treatment topical applications in syphilis may be dispensed with; mucous patches, papules, ecthyma, psoriasis, all disappear without the application of tincture of iodine, nitrate of silver, or any other remedy.

7. Patients bear this mode of administration very well on account of the immunity from local complication, and very soon become accustomed to the injections.—*Bull. Gén. de Thérap.* 30th January, 1882.

Elimination of Mercury.—Dr. O. Schmidt (*Diss. Dorpat*, 1879) has made a qualitative and quantitative examination of the urine, fæces, and saliva of fourteen patients under mercurial treatment, to determine the channels by which mercury is eliminated and the amount of the metal so got rid of. The saliva especially was very carefully collected, and in one instance only the parotid secretion was taken. No albumen or sugar was found in urines containing mercury. Seven of the patients were treated with subcutaneous injections of Bamberger's peptonate of corrosive sublimate. In these cases mercury appeared very speedily in the urine; after two injections, one being given daily, mercury was detected, and from the third day onwards its amount was ascertainable by quantitative analysis. In most of these cases no mercury was found in the saliva; in two cases traces were discoverable, and in these there was no stomatitis or salivation; in one instance stomatitis occurred, yet the amount of the mercury found in the saliva was extremely small. In six cases treated

with ungt. hydrargyri the proportion of mercury found in the urine was very variable; it was invariably much less than when the drug was administered by subcutaneous injection, though it increased considerably when the use of the ointment was prolonged. In three of these cases no mercury was detected in the saliva; in two cases, without stomatitis or salivation, mercury was found, and in another marked by considerable salivation, mercury was detected in the saliva, but the parotid secretion in this instance was found free of the metal. Under treatment with calomel internally, mercury appeared in the urine in considerable quantity. In regard to elimination by the urine, this preparation stands between sublimate (by injection) and blue ointment. The author states, with reference to treatment with mercurial ointment and subcutaneous injections of corrosive sublimate, that the amount of mercury passing through the system and appearing in the excreta during anti-syphilitic mercurial treatment varies within very wide limits, without involving any obvious difference in the duration of treatment or in the effect produced.

The author has also shown, from experiments on dogs, that in these animals, as in men, the salivary glands take but a very subordinate part in the elimination of mercury, and that mercury is removed from the system mainly by the intestinal canal and the kidneys. In only one instance out of three in which the salivary glands themselves were examined was a slight trace of mercury discovered in these structures.—*Cbl. f. d. Med. Wiss.* 10th December, 1881.

Conditions under which Colonies of Micrococci are Developed in the Vessels.—It is well known that in the bodies of those who have died of infectious diseases colonies of micrococci are often found in the blood-vessels, filling them completely for a longer or shorter distance, but the conditions under which these organisms are developed in this situation are not so well understood. This matter has been carefully studied experimentally by Dr. N. P. Wassilieff, of St. Petersburg. As the result of a number of experiments on frogs, he comes to the conclusion that, when in the animal organism, whilst the vital functions are still being performed, conditions arise which favour the development of micro-organisms in the body and the entrance of these into the circulation, these minute organisms are enabled to grow into colonies, but only *after* the death of the body as a whole, or after the death of the particular organ concerned. From this it follows that in many cases in which colonies of micrococci and bacteria are found in animals, we

have to do with a secondary phenomenon.—*Cbl. f. d. Med. Wiss.* 24th December, 1881.

The Bone-Conduction of Sound.—In the *New York Medical Journal and Obstetrical Review* for February, 1882, Dr. J. A. Andrews, Assistant Surgeon to the Manhattan Eye and Ear Hospital, gives an account of his investigations in regard to the intermittent perception of sound, as conveyed through the cranial bones—the observations having been mostly clinical, largely with the use of the tuning-fork. In order that an explanation of the phenomenon of intermittent bone-conduction may be understood, he thus formulates the points in differential diagnosis between an affection of the middle ear and one of the labyrinth, as evidenced by examination with the tuning-fork:—1. If a vibrating tuning-fork, c, be placed between the teeth, the hearing power being normal on one side and diminished on the other, and its tone be intensified in the ear of which the hearing power is diminished, the cause is seated in the external or middle ear, and the labyrinth is unaffected. 2. If the hearing power be impaired in both ears, and the sound of the tuning-fork be heard better in the worse ear, and intensified on closure of the ear of which the hearing power is most impaired, the cause is still located in the middle ear. 3. If under either of the above mentioned conditions the vibrations of the tuning-fork be not heard better in that ear of which the hearing power is most impaired, even if its meatus be closed with the finger, and middle ear disease as a cause can be excluded, there is an affection of the central apparatus of hearing. If the tone of the tuning-fork be still intensified by closure of the ear of which the hearing power is least impaired, there is disease of the central apparatus on one side only. Should the sound of the tuning fork not be intensified by closure of either ear, then the disease is on both sides, and has its seat in the labyrinth or in the brain. In the first and second propositions the increased resonance results from the reflection of the vibration from the cranial bones upon the nerve. In the third proposition the reflection or condensation of the vibrations of the tuning-fork upon the nerve when the meatus is closed does not intensify their perception, because the function of the auditory nerve itself and not that of the conducting apparatus is impaired. The peculiarity that in some cases of middle ear disease the watch is not heard by bone-conduction, and in other cases examination with the tuning-fork gives the signs of labyrinth disease—i. e., the tuning-fork being heard by bone-

conduction better in the ear which is normal as to hearing power, therefore diminished instead of increased in the ear of which the hearing capacity is impaired—cannot, it seems to him, be explained by assuming an interference with the conduction through the chain of ossicles. He inclines to the belief, based upon experiments, that this phenomenon is due to increased intra-labyrinthine pressure, brought about in those cases of middle ear disease in which there is an accumulation of fluid in the tympanum, or the membrana tympani is much depressed, in the former instance by the fluid in the cavity acting upon the oval or round fenestrum, or both, and in the latter instance by the plate of the stapes being forced against the membrane in the oval fenestrum. In both cases the terminations of the acoustic nerve suffer a mechanical irritation which gives rise on the one hand to subjective noises in the ear, and on the other hand annuls the perception of certain tones. Extreme pressure upon these parts may so interfere with intra-labyrinthine vibrations as to completely obliterate bone-conduction for the tuning-fork.

Suffocation by Tobacco during the administration of Chloroform.—G. Fischer relates in *Deutsche Zeitschr. f. Chir.* bd. xv, hft. 1 u. 2, a case of death under chloroform, due to a very peculiar cause. A man, aged 58, while being put under chloroform, not for the first time, suddenly showed symptoms of asphyxia. The tongue was drawn forward and artificial respiration employed, during which it was observed that air seemed to escape from the chest, but none entered. The patient died. At the *post-mortem* a "quid" of tobacco, 2.5 cm. long and 1 cm. thick, was found lying upon the glottis.—*Centralbl. für. Chir.*, No. 41, 1881.—D. M'P.

On Intra-Uterine Manipulation.—Dr. A. Martin, of Berlin, in reviewing the different methods of gaining entrance for the finger into the uterine cavity, condemns sponge, tupelo and laminaria tents on account of their slowness in action and the danger of septicæmia in connection with their use. Where it is necessary to dilate rapidly, he recommends Schroeder's method of splitting the cervix to the vaginal roof, and then pushing the uterus over the finger by external pressure.

In the majority of cases of disease of the mucous membrane, the author does not consider previous dilatation necessary. He uses a long, narrow steel curette, and with it scrapes off the whole lining membrane of the uterus, washes out the cavity

with a solution of carbolic acid, and lastly, injects a little perchloride of iron. In 300 cases treated in this way the results have been favourable, no fatal case having been met with. The reader is warned against operating in this manner, in cases of great anæmia, where the uterine muscular tissue is soft, or where there is inflammation of the neighbouring organs, and that rest in bed for seven or eight days afterwards is essential.

(We have used this instrument and have seen Dr. Martin use it on various occasions, and can testify to its efficacy, if not to its safety.)—*Centralblatt für Gynaek.* 7th January, 1882.—W. L. R.

Baths for the Newly-Born.—Dr. F. Winckel, of Dresden, makes the novel suggestion of keeping certain newly-born children permanently in warm water. This he considers more useful than rolling them in cotton wool, applying warm bottles, and keeping them in warm rooms. The following abnormal conditions are mentioned as being suitable for the permanent bath :—1. Children born between the 28th and 36th weeks ; 2. Children born asphyxiated and weak from flooding during labour, or who have accidentally lost blood from the stump of the cord ; 3. Where there is disease or fretting of the skin ; 4. In emaciation, to prevent bed sores. The author has employed this treatment successfully in cases such as those above mentioned, and gives details of temperatures and results.—*Centralblatt für Gynaek.* 7th January, 1882.—W. L. R.

The Action of the False Vocal Cords in Deglutition.—At the meeting of the Boston Society for Medical Sciences, held on the 15th Feb. 1881, Dr. T. Cabot reported a case of cut throat, in which the glottis was exposed. The wound had divided the thyroid cartilages just above the insertion of the false vocal cords, and at the time the case came under Dr. Cabot's observation there was a fistula of some size, "forming a window through which the action of the larynx in phonation and deglutition could be easily watched. In phonation the false cords were held widely apart, while the true cords approached each other and vibrated. It was in deglutition, however, that the mechanism was of special interest.

"When the patient swallowed, the first visible act was the closure of the false cords. These applied their edges closely together, while the last glimpse of the true cords showed them widely separated. As the act of deglutition progressed the mucous membrane over the false cords wrinkled and was

pressed forward as if the cords beneath had shortened. At this stage the parts were drawn together and puckered as the neighbourhood of the anus or other opening provided with a sphincter is during the action of that muscle. Finally, when the glottis rose, this folded mucous membrane was pressed firmly against and partly through the external opening," and any liquid or solid particles resting on the glottis at the time were thrown out through the fistula. "In a normal condition of the parts . . . it seems probable that the portions of food which fall below the epiglottis are pressed past and above it during this final rise of the glottis at the end of deglutition."—*Boston Med. and Surg. Journ.* 3d Nov., 1881.—D. M'P.

Some Remedies Employed in Hooping-Cough.—Heubner shows (*Wiener Med. Woch.*, 32, 1881) in tabular form, the effects produced by various remedies given in hooping-cough. Bromide of potassium was used in twenty-three uncomplicated cases, and though it did not shorten the duration of the disease it decidedly lessened the frequency and severity of the seizures. In three out of eleven uncomplicated cases in which quinine was given to the extent of 25 ctgr. per day, the duration of the affection was shortened, and in five cases the attacks of coughing were favourably modified. Hydrate of chloral, given internally in "broken doses," or administered by enema, shortened the duration of the disease in two out of ten cases, and in six cases modified the "kinks" sooner than quinine. Seventeen cases were treated with salicylic acid by inhalation; in only two of them was the duration of the complaint shortened, but the severity of the attacks was lessened in ten cases. In eight cases in which it was used, belladonna considerably diminished the severity of the seizures and the duration of the affection. On the whole, it seemed that the hydrate of chloral and inhalations of salicylic acid acted specially in lessening the severity of the seizures, while belladonna and quinine were of most value in shortening the duration of the disease.—*Bull. Gén de Thérap.* 30th January, 1882.

Pilocarpin in Diphtheria.—Dr. Greza Faludi (*Gaz. Med. Chir. de Pesth*, December, 1881) gives the following as his conclusions regarding the use of pilocarpin in this affection:—

1. Used internally against diphtheria, pilocarpin is a remedy the efficacy of which seems incontestable.
2. Provoking excessive salivation, it will always be found

useful in the various inflammatory and secretory affections of the mouth and pharynx.

3. It is most serviceable in slight cases, in which the disease is limited to the mouth and pharynx.

4. It does not prevent the morbid process spreading to the larynx and air passages.

5. It has no effect in grave cases in which the larynx and air passages are obstructed by false membrane.

6. In administering it to little children, its secondary depressing action must not be forgotten; it will be necessary in such cases to give stimulants, especially generous wines.—*Bull. Gén. de Thérap.* 30th December, 1881.

Reaction to Distinguish Ptomaines from Vegetable Alkaloids.—Messrs. Brouardel and Boutmy state (*Ann. d'Hyg. Publ.*, June 1881) that those poisonous alkaloidal bodies developed in the tissues after death, and named ptomaines, may be distinguished from vegetable alkaloids by the use of the ferridcyanide of potassium, which reduces the ptomaines and causes the formation of Prussian blue on the further addition of iron oxide. The vegetable alkaloids, with the single exception of morphia, have no such action, and thus a distinction of great importance from a medico-legal point of view is established. The test may be applied in the following manner:—The base extracted from the cadaver being reduced to the form of sulphate, a few drops of the solution are placed on a watch glass on which has previously been placed a small quantity of the solution of ferridcyanide of potassium; one drop of chloride of iron is now added, and if the base under examination be a ptomaine Prussian blue is formed.

The value of this test is lessened by the statement of Gautier to the effect that the vegetable alkaloids in general do give this reaction, though not at once, but after the lapse of some hours; and further, it seems phenyl, naphthylamin, and pyrrhidin bases have the same reducing action on ferridcyanide of potassium.—*Cbl. f. d. Med. Wiss.* 3rd December, 1881.

Blisters in Pleurisy.—Contrary to the usual practice, Dr. Bonamy, of Nantes, applies blisters in acute as well as in chronic pleurisy, in the early as well as in the late stages of the affection, and has never found reason to repent so doing. The application of blisters does not necessarily exclude the use of other remedies, such as antipyretics, diuretics, &c. Four cases of *acute* pleurisy are mentioned in which blisters were applied at once, while digitalis, jaborandi, &c., were used

internally, and in all the progress towards cure was satisfactory; at a later period, when the pleurisy is declining and only the effusion remains, blisters are of great value. The author concludes by repeating his conviction that both theory and clinical experience justify the use of blisters at the beginning of acute pleurisy as well as in its later stages; and he hints that blisters are not employed often enough at the present day, and that it is probably to this that the increased mortality from pleurisy in later times is due.—*Bull. Gén. de Thérap.* 30th December, 1881.

Carbolic Acid Poisoning.—Dr. Archer, in the *Liverpool Med. Journal*, narrates a case of poisoning by carbolic acid, from which he draws certain important deductions. The patient, a woman aged 40 years, swallowed a wine-glassful of crude, brown, syrupy carbolic acid, such as is used for disinfecting purposes. The treatment consisted mainly in the hypodermic injection of forty minims of pure ether with the administration of large draughts of olive oil.

From the facts of the case as given by Dr. Archer the following conclusions may be drawn:—(1) That the nervous centres are profoundly affected shortly after the reception of the poison into the stomach. (2) That a large dose of the poison, when concentrated, may be protective as regards the final result, by rendering the mucous membrane of the stomach non-absorbent. (3) That a moderate dose, considerably diluted, may prove fatal, the gastric mucous membrane retaining its absorptive powers. (4) That when the dose is concentrated, the introduction of stimulants into the stomach is not likely to be of any use, but stimulants used subcutaneously may prove beneficial in bringing about reaction. (5) That no permanent injury follows as a necessary consequence from a concentrated dose.—*Liv. Med. Journal.* January, 1882.—J. A. A.

Lumbar Plexus of Nerves.—Dr. Bert, in the *Progrès Médical*, 1882, concludes as the result of his experiments on dogs, that each nerve forming one of the roots of the lumbar plexus presides over a single group of muscles having a special common function. Thus the first nerve supplies the sartorius, the psoas, and the rectus femoris, a group of muscles which unite in producing flexion of the thigh. The second and third supply muscles which produce extension of the leg. The fourth supplies the posterior part of the biceps, the semi-tendinosus, the semi-membranosus, constituting the flexor group

of the leg, the adductor magnus and some muscles which in dogs act to extend the thigh. The fifth nerve in dogs governs the muscles which move the tail as a whole. (Laborde, commenting on this paper, remarked that clinical facts agreed with this law of nerve distribution.) It may be added that there are a number of similar instances in which muscles related as to function receive a common nerve supply. A well known example is found in the superior gluteal nerve which governs the action of internal rotation of the thigh by means of the tensor vaginæ femoris, the gluteus medius, and the gluteus minimus.—*New York Med. Journ.* January, 1882.—J. A. A.

Action of Quinine and Salicylic Acid on the Ear.—In the *Berl. Klin. Wochenschr.*, No. 49, 1881, Dr. W. Kirchner records the results of some experiments he made on rabbits, cats, dogs, &c., to determine the nature of the pathological changes produced in the ear by quinine and salicylic acid. It was found that not only was there hyperæmia of the tympanic cavity, leading even to hæmorrhage in some instances, but that the labyrinth also was affected. The author shares Weber-Liel's and Roosa's view that the cause of these changes is to be found in vasomotor disturbances; he holds that there is paralysis of the vessels, with congestion and exudation into the various tissues forming the organ of hearing.—*Cbl. f. d. Med. Wiss.* 18th Feb., 1882.

Statistics of Disease in Lying-in Hospitals.—Ahlfeld proposes a method of making the statistics of these institutions more reliable and useful for comparison. He believes that, from passing causes, we may often have raised temperatures in the evening during the puerperium, but that the morning temperatures are not liable to variation except as the result of septicæmic disease. It is suggested that if, during the first seven days after labour, we have no morning reading of the thermometer above 38° C. (100·4° F.) then we may set the case down as normal; if any except that taken on the morning a few hours after labour, are higher, then it is to be reckoned pathological.—*Centralblatt für Gynæk.* 14th Jan., 1882.—W. L. R.

Drainage of the Peritoneal Cavity.—Kehrer, of Heidelberg, discusses the various means for removing fluid from the peritoneal cavity after ovariectomy. He suggests capillary drainage as the most effective. Some narrow pieces of

carbolized cotton cloth are put into an india-rubber or Koeberle's drainage-tube, and the end brought so low down outside the body, although still within the antiseptic dressing, as to have somewhat of a syphon action. He details a case where this method was used with success and was found more effective than the ordinary methods.—*Centralblatt für Gynaek.* 21st Jan., 1882.—W. L. R.

Sugar in the Urine of Women after Confinement.—Until Hofmeister's researches were published in 1877, the nature of the sugar contained in the urine of women recently confined had not been directly demonstrated, though it had been previously established that such urine contains some reducing substance which seemed to be sugar, and that the production of this substance had some relation to the lacteal secretion. Kaltenbach has demonstrated the absolute identity of this substance with sugar of milk. He finds it constantly in the urine of those recently confined, and that at the times when the urine contains most sugar there is always found to be an accumulation of milk in the breast. He therefore concludes, with Spiegelberg, that this is a diabetes from absorption; the stasis of milk results in the absorption of a part of its constituents—water, sugar, salts, while the proportion of fat and casein is increased in the remaining liquid. (*Zeitsch. f. Geburtshülfe u. Gynaek.*, iv, 2, 161.)

Johannowsky (in *Arch. f. Gynaek.*, xii, 3, 448) points out, however, that the reduction of Fehling's solution is not a conclusive indication of the presence of sugar, as certain normal constituents of the urine act as reducing agents, such as uric acid and creatinine. The only indisputable evidence of the presence of sugar consists in observing the ray of light turned to the right in the polarimetric apparatus. The author examined the urine of 25 healthy men, and found that all of them reduced the oxide of copper, and that they all turned polarized light to the left. In eighteen out of twenty-five cases the urines of women recently delivered varied considerably in their reducing power, and in the extent to which they caused polarised light to deviate to the left; these were regarded as normal urines. Four out of twenty-five showed the dextro-rotatory action, and also reduced copper oxide; but the quantity of sugar could not be exactly ascertained, either by polarization or by the reduction test, on account of the reducing action of the other constituents of the urine and the lævo-rotatory power possessed by the urine itself. Chemically, the author admits that the mechanical arrest of

the milk in the breast is the principal cause of the appearance of the sugar in the urine, and that richness of the lacteal secretion and development of the mammary glands are predisposing causes.—*Bull. Gén. de Thérap.* 15th Nov., 1881.

Detection of Bloodstains.—Professor Dragendorff, in a memoir entitled “*Untersuchung von Blutspuren*,” published at Dorpat, gives the following series of tests for the detection of bloodstains:—It is assumed that the quantity at disposal is only very small, and in such a case it is important that one and the same spot or portion of a spot should suffice for several reactions. If it be possible to remove particles of dried blood with a knife, this should be done, and the dried blood reserved for subsequent examination. The scraped spot may then be employed for the tests (a) to (e).

(a). The guaiacum test.—A small piece of filter paper is wetted with distilled water, laid upon the spot, and frequently pressed down with a glass rod. After a lapse of five to thirty minutes it is removed and moistened with oxygenated turpentine* and fresh tincture of guaiacum. The blue coloration must make its appearance within a few minutes.

If the coloration does not make its appearance it will scarcely be possible to detect blood by any other test. But the success of the test does not necessarily prove the presence of blood, since many other organic substances yield a similar reaction.

(b). Another or the same portion of the spot may be macerated with a few c.c. of a cold saturated solution of borax, either at the ordinary temperature, or at about 40° C. The solution gradually assumes a red or reddish-brown colour if blood be present. In this case it must be tested spectroscopically for oxyhæmoglobin.

It has been urged against this test that other solutions, such as certain red inks made from cochineal, a colouring matter in the feathers of the banana-eater, purpurin-sulphuric acid, may show similar spectra. The first may be recognized by their being decolorized by chlorine water without producing a precipitate. The second does not yield the spectrum of reduced hæmoglobin. To obtain this from oxyhæmoglobin, treatment with a solution (1 to 5) of sulphide of sodium may be recommended. The last, purpurin-sulphuric acid, only yields a spectrum when the solution is hot.

* Oil of turpentine which has been exposed for some time to the action of the air.

(c). If the spectroscopic test succeeds, the guaiacum test may be repeated with a small quantity of the solution.

(d). The solution is diluted with 5-6 volumes of distilled water, and 5 per cent solution of acetate of zinc added as long as a precipitate is formed. This is filtered off and washed slightly. This precipitate dissolved whilst moist in 1-2 c.c. of glacial acetic acid shows the hæmatin spectrum if sufficient blood be present.

(e). A small portion of the precipitate may be dissolved on a slide in a drop of glacial acetic acid, a small crystal of common salt added and allowed to dry slowly by exposure to the air. The slide may then be examined microscopically for Teichmann's hæmin-crystals.

(f). If any dried blood has been scraped from the spot a few fragments may be used for the hæmin-crystals as in (e). After recognising these under the microscope the slide may be washed with a little water and the guaiacum test tried as in (a). Finally, the remainder may be incinerated and the residue tested for iron.

If plenty of material is at disposal nitrogen may be detected by the usual methods. If the spots are upon iron, it must be borne in mind that iron rust may absorb ammonia, and so yield the nitrogen test. Wool, silk, hair, &c., can also be a source of error.

The detection of blood on rusty iron is rendered somewhat more difficult by the fact that the colouring matter of the blood forms a compound with the iron rust, which is not easily soluble. Borax solution at a temperature of 50° C. removes hæmoglobin from this compound. The solution thus obtained may be examined as above described; or the iron rust may be treated with warm acetic acid and examined in the spectro-scope for hæmatin.

Thus the means at our disposal for determining whether a stain or spot has been caused by blood or not are to be regarded as very satisfactory. They are, however, not so satisfactory if we are asked whether the blood be human or not.

(g). If the blood be fresh, the size and shape of the corpuscles may be of service; since they differ, though not very greatly, in different animals. But in partially decomposed, as well as in dried blood, the blood corpuscles are generally so much altered as to render the examination difficult and the results unreliable. A thin fragment scraped from a blood spot may be examined in turpentine under the microscope, or soaked in solutions which either do not at all, or only slowly,

attack the corpuscles. Various solutions have been recommended for this purpose, none of which answers the purpose exactly.

After removing the hæmoglobin, as far as possible, with such solutions, the residue may be tested with an aqueous solution of iodine. The blood fibrin which is left undissolved absorbs iodine and renders itself thus evident. Proof of the presence of fibrin may be of importance, since its complete absence would indicate the use of a defibrinated blood, perhaps to simulate a crime.

(k). Possibly hairs, fish scales, &c., imbedded in the blood may indicate its origin. Often, too, the dried blood warmed with a little dilute sulphuric acid, evolves an odour peculiar to the animal from which the blood has been derived. Fish blood, pig's and cat's blood, may in this way be sometimes very distinctly recognized.

(l). Blood from the stomach, &c., frequently contains epithelium-cells and sarcinæ; from abscesses fat, pus-corpuscles and cholestearin. In cases of alleged violent defloration or stupration epithelium-cells and spermatozoa should be searched for.

(m). Bug and flea spots differ in appearance; the residue is free from fibrin and from blood corpuscles.

(n). The exact determination of the age of a blood spot is not possible. The older a stain is the more difficult it is to extract the hæmoglobin. A solution of arsenious acid (1 in 130) dissolves a spot one to two days old in the course of about a quarter of an hour; eight days old in about half an hour; after two to four weeks in one to two hours; after four to six months in three or four hours; after a year in four to eight hours.

Solution of borax may be recommended for the extraction of blood from earth, &c. Such a solution may be examined spectroscopically. One c.c. of blood in 200 grams of peat may be easily detected.

Highly diluted blood, such as for instance soapy water or spring water containing small quantities of blood, may be precipitated with acetate of zinc. 0.25 c.c. of blood in 1,500 cc. of water can be easily detected. But the limit in urine is 1 in 1,000. Certain constituents of the urine render the detection more difficult.—*Pharmaceutical Journal*. 14th Jan., 1882.

Radical Cure of Hernia.—Dr. Alexander, in a paper which appears in the *Liverpool Medical Journal* for January, 1882,

discusses at length the comparative value of the many operations for the radical cure of hernia. The important points in his paper may be summarised as follows:

1. Ligature of the neck of the sac, so as to obliterate the accidental or congenital depression that was at once the predisposing and exciting cause of the hernia, offers by far the best method of radical cure.

2. Other methods of cure are only effective in so far as they obliterate the sac up to its opening into the abdomen.

3. Methods of strengthening the abdominal supports too often fail if the sac is not obliterated, since the continuous pressure of the hernia on the unobliterated part of the sac will almost certainly neutralise and overcome any amount of cicatricial resistance that we are capable of generating in the surrounding tissues.

4. After ligature of the neck of the sac it is unnecessary to further disturb it, except by incision to solve the continuity between it and the neck, and thus obtain better occlusion of the ligatured part.

5. That the operation, if carefully performed, is far less dangerous than the method of refusing to interfere with the cases upon whom the operation is justifiable.—J. A. A.

Tonsillitis and Hypertrophy of the Tonsils treated with Bicarbonate of Soda.—Dr. Armangué reports in the *Revue de Thérapeutique* seven cases of tonsillitis cured in less than twenty-four hours by the bicarbonate of soda. This method of treatment was introduced by Dr. Giné, who employed the drug locally either by insufflation or by direct application by the finger of the patient. The applications should be frequently repeated till the disease disappears. The efficacy of this mode of treatment is especially marked in the prodromic period of tonsillitis, when it will invariably abort the disease. It does not diminish the tendency to such affections, but only arrests their development.—(*L'Union Méd. de Canada*, December, 1881) *Med. News*. 21st January, 1882.



THE
GLASGOW MEDICAL JOURNAL.

No. IV. APRIL, 1882.

ORIGINAL ARTICLES.

CASE OF LATERAL AND SUPRA-PUBIC LITHOTOMY.

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(*With a Photograph.*)

H. DOUGLAS, hairdresser, æt. 48, was admitted to the Western Infirmary, on the 22nd February, 1881.

Patient looks very much older than his real age, his hair being perfectly white. He has suffered from symptoms of bladder irritation for twenty-four years, exactly half his lifetime, and he makes a remarkable statement—namely, that during all that time he has not, so far as he could observe, passed a single drop of blood. He now complains of pain over pubes and at the point of the penis, with great frequency of micturition, all the symptoms being aggravated by exertion. He has never, that he remembers, passed any *gritty* matter, his urine having always been very clear.

23rd February.—On passing a sound, the instrument struck against the stone immediately on entering the bladder, and the presence of a large, and unusually rough, mulberry calculus was made out.

3rd March.—Patient, having been anæsthetised, was tied up in the lithotomy position, and Professor Macleod's modification of Dr. Andrew Buchanan's rectangular staff introduced. The knife passed easily into the bladder, and on introducing my finger, I at once expressed a doubt as to the possibility of safely removing the stone by this incision; due, not so much to the size of the stone, although large, as to the extra-

ordinarily sharp, spicular surface which it presented. The original wound was cautiously enlarged by means of a probe pointed bistoury, but the inevitable extensive laceration and bruising which must have attended removal, induced me to desist from any further attempts to extract it in that situation. An incision in the middle line was now made, three inches in length, just above the pubes, and by careful dissection the reflection of the peritoneum was exposed and held back; then the upper part of the anterior wall of the bladder was divided, and the stone easily grasped by the forceps. The greatest difficulty was experienced here, and it was only after introducing a scoop, and levering it, that the stone was at length extracted—the extraction was assisted by a finger placed in the rectum, supporting the calculus.

Comparatively little hæmorrhage followed or occurred during the operation. The edges of the supra-pubic wound were brought together by wire sutures, and a drainage-tube inserted, although hardly necessary—a sponge was applied to the perineal wound, while that above pubes was dressed with oiled lint.

There was a considerable amount of shock, from which patient soon rallied. Beef tea and milk were ordered, along with ʒij. of brandy in soda water every hour; however, at his request whisky with the same quantity was substituted. A half grain morphia suppository was to be administered if he complained of pain.

3rd March.—9 P.M.—Patient's condition on the whole is very satisfactory. Pulse, 120. Temperature at 4 P.M., 100°·4; at 8 P.M. 100°·2. Respiration perfectly good. No pain of any consequence. Urine has continued to come freely from the perineal wound, by means of the tube, being received in sponges and towels placed between patient's thighs. No bleeding has taken place since the operation. The supra-pubic wound was dressed, and has all the appearance of uniting easily. No urine has come away by the upper end of the tube since the operation.

4th March.—Patient passed a very good night, having slept well. The tube, which passed through the bladder, and through both wounds, was removed, the bladder having been previously washed out with a tepid, 1-60 solution of carbolic acid. A circular cushion, with a deep plate beneath, was arranged so as to prevent wetting, and to obviate the irritating effect of the urine on the skin. Olive oil was applied to the lower parts of the back and buttocks. Pulse, 100. Temperature, 99°. A fair amount of nourishment in the shape of milk,

with occasionally some of *Brand's Essence* made into the fluid form.

4th March.—9 P.M.—In the afternoon patient complained of some uneasiness above the pubes, and, on lifting the dressing, urine was observed welling up at the lower angle of the wound.

The perineal wound was then examined, and it was found that no urine was escaping from it; a No. 12 elastic catheter was introduced from the perinæum into the bladder, after which the escape of urine from the supra-pubic wound entirely ceased. Temperature 99°2.

5th March.—9 A.M.—At 3 A.M. had a half grain morphia suppository, after which he slept more or less continuously till the hour of visit. Urine, slightly coloured with blood, coming away freely by the perineal tube. Patient expresses himself as feeling very easy. Temperature 98°6. Pulse 100.

5th March.—9 P.M.—Doing well. Temperature 98°2. Pulse 88.

6th March.—9 A.M.—Slept well until about 3 A.M. When he awoke, complaining of some pain in the abdomen, apparently due to flatulence, a suppository was given, and he had good rest till the visit hour. Temperature normal. Pulse 90, and firm. Dressed supra-pubic wound with oiled lint, 1·40, as before, the superficial wound may be said to be healed. Back oiled. No motion from bowels since operation.

6th March.—9 P.M.—Temperature normal. Pulse 80.

7th March.—9 A.M.—Patient annoyed with abdominal pain, apparently due to flatulence. Temperature 98°6. Pulse 80. As bowels have not yet been opened an enema was administered at 12·30 P.M., but without the desired result. Urine passing in full quantity, and free from blood tinge. Wound dressed.

8th March.—9 A.M.—At 10 last night patient had a hypodermic injection of morphia, after which he rested very well all night. Patient expresses himself as feeling better to-day than he has done since the operation. Temperature normal. Pulse 90.

9th March.—9 A.M.—As usual.

11th March.—Improvement may still be noted. Supra-pubic wound healed, except at lower angle, where tube passed at first. Allowed some solid food for dinner. Temperature and pulse natural.

15th March.—Tube removed from perineal wound.

16th March.—Dose of castor oil given, which was followed by a copious motion. Appetite very good, having porridge

and milk for breakfast; and soup, steak, or chops, for dinner.

To-day, for the first time, patient passed urine by the urethra to the extent of zviij .

20th March.—All the urine comes now per urethram.

24th March.—To-day patient complained of pain in the left testicle, which is enlarged and tender to the touch. He had a smart attack of fever, the temperature running up to 103° . A dose of Rochelle salts was ordered, and poultices applied to scrotum every four hours.

28th March.—Patient has recovered his usual satisfactory state.

1st April.—Dismissed.

The stone, which is a fine specimen of the oxalate of lime calculus, weighed 1,020 grains, and was of a very dark, almost black, colour. In the interstices of the spicules a slight phosphatic deposit was visible. The body of the stone was of an almost cuboid form, closely studded on its surface with strong spiculæ of a conical shape, and presenting on their sides numerous small projections, as if rudimentary secondary spiculæ were in process of formation. Taken as a whole, the calculus measured in circumference six inches in its long, and $5\frac{1}{2}$ inches in its transverse diameter. The patient continues in excellent health, and follows his usual calling.

ABDOMINAL ABSCESS FOLLOWING ENTERIC FEVER.

By GEO. W. THOMSON, M.D., Haywood, by Lanark.

T. W. had a severe attack of enteric fever. It ran the usual three weeks. During that time he suffered much from noisy delirium. He partook readily of everything he was offered. It had been noticed that he often put his hands over his bowels as if pained. For this an occasional poultice had been applied. About the crisis he had severe epistaxis. This was on the 23rd March, 1881. From this time improvement began; the fever went down, his consciousness returned, and with it a craving for food. He was believed to be convalescent. Some days later he felt uneasy in the bowels—they were hard to touch, while he could not move without pain. He became gradually worse.

On 18th April I saw the patient for the first time—a man about 40 years of age, tall and dark looking, but now greatly reduced. His tongue was clean. Pulse, 110, weak. Temperature, 101°. His bowels were now acting regularly and easily; but for the past fortnight they had been very costive, requiring large doses of castor oil, followed by Epsom salts to move them. He sweated most profusely; had no shiverings. On examining his abdomen a lump was felt on the right side of the umbilicus, but between it and the groin. Its size would be that of a large orange. It was very painful to touch, quite hard, and perfectly distinct. It seemed to me to project outwards from the posterior part of the abdomen, so freely did the skin move over its surface. Poultices were to be constantly applied, to have best feeding, with port wine and 2 grains of quinine every three hours. Up till 26th April his condition was daily becoming worse. The pulse was now very quick, weak, and intermitting; he sweated most profusely, had frequent vomiting with diarrhoea, and great tympanitis. Stimulants, quinine, bismuth, turpentine, &c., were given as required. The lump now was much increased in size. The hardness extended from the groin to the lower ribs, and for two inches beyond the middle line. The skin was red, and was now scarcely, if at all, movable over it. Great pain was felt on touching it. Fluctuation could not with any certainty be made out. As the man was to all appearance dying, it was evident that something must be done. An exploring needle was introduced into the lump, when a little dark bloody looking matter came. Doubt was felt as to what to do; whether to cut down and put in a drainage-tube, or use the aspirator. The latter was preferred. Our patient being chloroformed, the aspirator needle was introduced a little to the right of the middle line, and about two inches below the umbilicus. 3v of dirty grumous looking matter was drawn off. It was quite sweet to smell. Quinine and stimulants were freely given. He gradually revived and daily gained in strength. The lump, although reduced somewhat, continued hard and very slowly subsided.

On 11th May it was very little reduced, but did not now project through abdominal wall, while the surrounding inflammatory swelling felt softer. Five grains each of iodide of potassium and carbonate of ammonia with bitter infusion was ordered, while iodine liniment was to be applied externally. After using the liniment for some days it had to be stopped. Several slight shiverings were experienced, the lump became more painful, the swelling increased, and with it a return of

the fever. Poultices were re-applied for three days, when the abscess burst, discharging about 3ss of yellow pus. Improvement again set in and steadily continued; so that on 10th July he was allowed to get up and move a little about. A slight hardness could still be felt. He experienced no pain or discomfort from it, and had become stouter than ever. On 10th August T. W. called on me. He reported himself as feeling perfectly well and desired permission to resume work. He felt no pain in the bowels and could walk about as well as ever. On examining the abdomen the lump was gone, only a slight ridge of hardness remained. This was felt for about five inches, running parallel with the bodies of the vertebræ, but a little in front and to the right side of them. On deep and firm pressure over it, a little tenderness was felt, but not what would amount to pain.

As to the cause of abscess arising in this case of fever I can say nothing definite. The time of the illness at which I was called in, to a great extent prevents that. It appears, however, that some eight days previous to taking his bed, he had, while at work, given his back a sudden wrench. This annoyed him for a day or two, but no longer. He thought nothing of it until questioned afterwards. This may have been the cause. Were it so, a continuation of the pain in the back would have been expected. This was not the case. From what, then, could this abscess arise? Possibly from suppuration of some of the mesenteric glands. The situation of the pain (always in the bowels) along with the hard ridge, which was felt on deep pressure over the abdomen, would point to this. Although our patient was considered an extra strong man and always enjoyed good health, his family had suffered more or less from scrofulous diseases of the joints and glands.

Another probable cause of this abscess may be mentioned. Partial peritonitis may have been set up from rupture of the bowel, or otherwise, ending in the formation of abscess.

THE PATHOLOGY OF DIABETES MELLITUS.

By JOSEPH COATS, M.D.

THE pathology of diabetes is a subject of considerable difficulty, and it may be well at the outset to set forth the problem which requires solution.

The blood and urine contain normally a small quantity of grape sugar, but in diabetes this undergoes an enormous increase. In the normal condition the sugar is at a constant minimum, unaffected by the amount or kind of food taken. In diabetes there is commonly a very obvious relation between the food taken and the sugar. There are some diabetics who cease to excrete any excess of sugar so long as they abstain from starch or sugar, but whenever they take any such food it is mostly converted into grape sugar and so excreted in the urine. On the other hand there are diabetics who excrete an excess of sugar whatever the kind of food they take, and though the sugar may be diminished by the use of a mainly nitrogenous diet, yet it cannot be thus made to disappear. In that case it is obvious that sugar is formed not only from carbo-hydrates, but also from the albuminous principles of the food. According to Traube diabetes is divisible into a slighter and more severe form according as the sugar is formed from the carbo-hydrates alone or from nitrogenous principles as well, and it is probable that these forms represent an earlier and a later stage in the disease. Donkin, in view of the relation of the sugar production to the food, distinguishes three stages, first that in which only the starch or sugar of the food furnish the grape sugar, second that in which fats as well as these are converted, and third that in which albuminous foods, as well as starchy and oily, undergo conversion into grape sugar.

It is obvious that in this latter stage there is a great consumption of albumen, and in the process of formation of the sugar urea is formed as a waste product in the chemical transformation. We find, therefore, that the urea is also greatly increased in the urine, amounting sometimes to two or three times the normal quantity in the twenty-four hours. In this stage of the disease there is no doubt that the fatty and albuminous constituents of the tissues are also used for the formation of sugar, and that the albuminous principles of the tissues like the albumen of the food furnish sugar and urea which appear in the urine.

The problem which we have to face then is, that in diabetes there is, for some reason or other, an excessive demand for sugar in the organism. The greed for sugar seems to acquire intensity as the disease advances, so that while at first it is only the carbo-hydrates which fall a victim to it, there is ultimately a consumption of the nitrogenous foods and even of the nitrogenous tissues. We have to enquire what may be the meaning of this immense demand for sugar. Look-

ing to the manner in which the processes of the body are arranged, we may take it for granted that there is some need to be supplied or else such an excess of material would not be furnished.

Sugar is a crystallisable substance, and wherever it is formed it will readily be dissolved by the juices and find its way into the blood. Its occurrence in the blood and its excretion by the urine are therefore simply a result of the ready solubility and diffusibility of the substance. Its presence in these fluids throws no direct light on its place of origin.

It is natural to look to the liver as the source of the sugar. It is well known that the liver is the place of formation of a substance nearly allied to sugar, namely glycogen. This substance, as its name implies, has a great tendency to become converted into sugar. It is true that in the living body the liver, apparently, contains glycogen and not sugar. If the liver of an animal be cut out immediately after death and without delay placed in boiling water after being cut into small pieces, then it will be chiefly glycogen that will be found, and any sugar that exists has probably formed after death by the transformation of the glycogen. It is difficult indeed to avoid the occurrence of traces of sugar in this experiment, and if the removal of the liver be delayed a large amount of sugar will be found. These facts show that glycogen is always just ready to be converted into sugar, its conversion is, as it were, every moment imminent. During life this conversion does not take place to any considerable extent, and it is even doubtful whether the small amount of sugar existing normally in the body is due to a conversion of the glycogen in the liver, a comparison of the blood in the hepatic vein with that in the portal giving doubtful results.

We have to consider, however, whether a pathological conversion of the glycogen into sugar may not occur in the liver, and in this regard the observations of Bock and Hoffman are of great interest. These observers succeeded in the production of an artificial diabetes mellitus by injecting into the blood of rabbits large quantities of a watery solution of common salt. The animals, soon after the injection was made, began to secrete a large quantity of urine, and this urine soon became saccharine. If the injection of salt solution was persisted in, the sugar by and bye diminished in the urine and ultimately disappeared.

The question now is as to the source of the sugar, and the condition of the liver was examined with this view. It became abundantly clear that the sugar in the urine came from the liver and was caused by the conversion of the glycogen into

sugar. In all cases where the animal was killed after the diabetes had passed off, the liver was found free both of the glycogen which exists normally and of sugar. If, on the other hand, the animal was killed while the mellituria existed, then glycogen and sugar were both present in the liver. The inference from these observations is perfectly obvious. The abnormal condition of the blood causes the transformation of the liver glycogen into sugar, and the latter being a crystalloid and readily diffusible it is at once washed out of the hepatic cells and passes into the circulation and on into the urine. The diabetes ceases because all the glycogen in the liver has undergone conversion into sugar and the source of supply is exhausted, the liver in these cases being found free of both glycogen and sugar. We may say, therefore, that a glycosuria may be produced by the conversion of the glycogen within the liver into sugar.

It may be said that the diabetes thus produced is temporary and not comparable with the permanent disease in the human subject. Let us suppose, however, that diabetes is due to the conversion of the liver glycogen into sugar, then the problem with which we started will undergo a considerable modification. We saw that there is an excessive production of sugar, but in the view now brought forward this will resolve itself into an excessive production of glycogen which undergoes conversion into sugar. The problem therefore presents itself—Is there anything to account for the excessive formation of glycogen?

It is to be presumed that glycogen has an important function in the animal body. Whether it be used in the production of muscular force, as many suppose, or otherwise, it seems clear that such an organ as the liver would not be engaged in its formation unless it had an important part to play. It is to be presumed then that glycogen supplies some need in the organism and that it is formed in the liver for that purpose.

But if, as soon as it is formed in the liver, it is transformed into sugar then the need in the organism will not be supplied. The sugar being a crystalloid will be washed out, and very little glycogen will get into the blood. In such circumstances the organism will have, as it were, a hunger for glycogen, the liver will be stimulated to supply it, and will produce more glycogen. As soon as it is formed, however, the glycogen will be transformed into sugar and the excessive demand for glycogen will only result in an excessive supply of sugar. In this case the liver will be stimulated to an ever-increasing

formation of glycogen which will immediately pass into sugar. We can understand how in the earlier stages all foods which are near to glycogen in their chemical composition will be at once utilised, and how as the disease goes on and the demand becomes more urgent the other kinds of foods and even the tissues of the body will be used.

So long therefore as the hepatic cells retain their activity we may presume that they will react to the hunger for glycogen, and the production of sugar will be the result. If the hepatic cells be destroyed or weakened the probability is that the diabetes will diminish, the disease requiring that the hepatic cells retain their energy.

It would appear from the above that the diabetes is explainable on the supposition that the glycogen undergoes abnormally a transformation into sugar, and that this occurs in the liver itself. We have now to inquire whether any indication exists as to the cause of this transformation.

In the experiments of Bock and Hoffmann already alluded to it appears that a particular abnormal condition of the blood is capable of producing this transformation. An enormous dilution of the blood with salt solution seems capable of inducing the liver glycogen to pass into sugar. A temporary diabetes has been produced in a variety of other ways and all of them are explicable on the ground of an abnormal condition of the circulation of the liver.

The inhalation of nitrite of amyle induces a temporary glycosuria. We know that this agent produces a general vaso-motor paralysis, and a general dilatation of the systemic arteries. With the other arteries those of the abdomen will dilate and the blood passing through the capillaries at an increased rate will reach the portal vein at a higher pressure than normal. The circulation in the liver will therefore be accelerated and the blood will be less venous in character, having passed rapidly through the capillaries of the intestine and other organs.

The celebrated diabetic puncture of Bernard is made in the medulla oblongata, and we know that in this part of the nervous system are situated the principal vaso-motor centres of the body. There is therefore here also a paralysis of the arteries just as after the inhalation of nitrite of amyle. Injuries to the brain, spinal cord, and sympathetic sometimes produce a temporary glycosuria, and they also may cause vaso-motor paralysis.

The observations of Pavy are important in this regard. He produced glycosuria by the injection of defibrinated arterial

blood into the portal vein, and here again there is an excessive supply of blood to the liver. But then Pavy also produced glycosuria by ligaturing the portal vein, and so cutting off the blood supply except through the hepatic artery, and at first this result seems a very contradictory one.

The effect of that experiment would be to cause the liver to be supplied with arterial blood alone, and we may presume that the hepatic artery would dilate and so allow of an additional flow of blood. According to the researches of Cohnheim and Litten (*Virchow's Archiv*, vol. lxvii) the blood of the hepatic artery, after supplying the connective tissue, gall ducts, and walls of the large blood-vessels, passes into the inter-lobular veins and on into the proper hepatic capillaries, so that the blood of the hepatic artery is finally distributed with that of the portal vein. When the portal vein is closed, the circulation in the liver will be kept up, but by the blood of the hepatic artery.

From these observations Pavy concluded that the cause of the glycosuria when the portal vein was ligatured was the circulation of arterial blood in the liver, and he proceeded to determine whether it was possible in animals to produce diabetes by supersaturating the whole blood with oxygen, so that the blood in the portal vein would be virtually arterial. He effected this in various ways, by causing the animals to inhale oxygen; by using artificial respiration till the fact that the animals ceased to make any spontaneous respiratory movements showed a deficiency of carbonic acid; by causing the animals to inhale carbonic oxide. In all these ways glycosuria was produced. It would appear therefore that when diabetes is artificially produced in animals the one essential condition is that the liver should be supplied with unduly oxygenated blood, such blood causing the glycogen to be transformed into sugar in the liver itself.

We have now to consider the question whether this view will explain the occurrence of diabetes in the human subject. Is there any evidence of such an alteration of the circulation in the liver in any cases of diabetes? It is to be noted here that in order to an active hyperæmia of the portal circulation there must be an active hyperæmia in the parts to which the coeliac and mesenteric arteries are distributed. The circulation in the portal vein depends entirely on that in these vessels, and unless the blood passes in greater abundance and more rapidly through the vessels of the abdominal viscera from which the portal blood comes, then it cannot pass more quickly through the portal vein. Moreover, if diabetes depends

on the blood in the portal vein being unduly oxygenated, this can only happen because it passes so quickly through the capillaries of the alimentary canal and other organs that it is imperfectly deoxygenated. The question to be answered then is, whether there is any evidence of diabetes being due to a vaso-motor paralysis inducing an active hyperæmia of all these organs.

Such a vaso-motor paralysis might arise by disease of the central nervous system, or of the local centres in the abdomen, mainly the coeliac plexus. In regard to the latter, some cases have been recorded (by Ferichs, Klebs, and Recklinghausen) in which diabetes has coexisted with atrophy, formation of calculi, or cancer of the pancreas. In cases observed by Klebs there was, along with the atrophy of the pancreas, a very marked change in the coeliac plexus consisting of a great destruction of ganglion cells. It seems very probable considering the nearness of the pancreas to the coeliac plexus that a cancer or the changes resulting from the formation of calculi in the ducts of the pancreas might extend to the coeliac plexus. Klebs accounts for the diabetes in his cases on the view that there was vaso-motor paralysis produced by the destruction of the ganglion cells of the coeliac plexus. In one of his cases indeed there was observed after death an extraordinary dilatation of the hepatic and splenic arteries and the gastric branches of the coeliac axis, the last named branch attaining the size of a goose quill and presenting a highly convoluted course. These facts seem to confirm the view that in man diabetes may be produced by paralysis of the arteries in the domain of the coeliac plexus.

There have been also cases in which diabetes seemed to follow injury to the spinal cord or medulla oblongata, but these have been cases of temporary glycosuria comparable to that following Bernard's diabetic puncture. On the other hand there have been a few instances of softening of the brain and intra-cranial tumours in cases of diabetes, but these have been too rare to be regarded as of much importance in the pathology of diabetes. For the most part there is little or no alteration visible to the naked eye in the central nervous system.

Recently Dickinson has described minute changes in the central nervous system, consisting mainly in excavations around the arteries, produced apparently by exudation from these vessels with disintegration of the brain substance around. In very recent cases there was even accumulation of leucocytes or hæmorrhage around the arteries, but in the older cases a

cribriform appearance, the arteries being surrounded by widened canals. These lesions are scattered through the brain, the largest and most striking being present in the corpora striata, optic thalami, pons, medulla oblongata, and cerebellum. They are less marked in the cord where in addition there is usually great dilatation of the central canal. The white matter of the cerebral convolutions also frequently presents these lesions.

These lesions are held by Dickinson to be primary and directly related to the cause of the disease. If this view be correct, then we should have lesions of the central nervous system leading to diabetes, and doing so probably by vaso-motor paralysis of the arteries of the abdominal viscera. This is open to the objection, however, that these lesions in the nervous system may possibly be secondary, due to a dilatation of the arteries not to exudation from them, especially as we know that exudation occurs rather from capillaries and veins than arteries.

Turning to the abdominal organs themselves, there have been in many cases indications of congestion observed. We have already referred to the enlargement of the arteries in the case described by Klebs. The liver itself is generally described as congested, and in a few cases there has been thrombosis of the portal vein.

The characteristic red tongue of advanced diabetes has been cited by Pavy as evidence of a congestion of the alimentary canal. The congestion only in the later periods extends to the mouth, the vaso-motor paralysis being progressive.

SALICYLIC ACID: ITS HISTORY AND USES.

By J. WALLS WHITE, M.D., GLASGOW.

ALTHOUGH salicylic acid has been known to the profession for several years, there still remains a general want of appreciation of its chemical relations, as also a lack of knowledge as to its medicinal powers. The rapidly extending application of it to surgery and medicine indicates it to be a therapeutic agent of great value. It was first known as far back as the year 1838, when Piria and Ething extracted it from the blossoms of the spirea ulmaria. Since that time several chemists have prepared it from other vegetable substances, chiefly from the

oil of wintergreen, which still remains the chief source of the natural acid.

In 1855, Bertagnini made the first communication as to its physiological effects, which are even yet accepted as correct. For several years thereafter it remained a laboratory curiosity. In 1869, Kolbe and Lantemann succeeded in forming it synthetically. Lantemann, however, died, and Kolbe continued to prosecute his experiments on it. Carbolic acid had by this time come into prominence as an antiseptic, and the intimate chemical connection between the two suggested similarity of properties.

In 1874, Professor Kolbe had so far perfected his process as to be able to manufacture it on the large scale and at a moderate price. His method of production, and that by which most of the acid at present used is obtained, consists in saturating carbolic acid with caustic soda, heating the mass when absolutely dry with carbonic acid gas at a temperature rising from 212° F. to 482° F.; the resulting compound, acted on by hydrochloric acid, yields the crude salicylic acid, which is purified by repeated crystallisation.

The name is not derived from salicine, the alkaloid of willow bark, but from salicyl or salicylol ($C_7H_6O_2$), an hypothetical chemical radical. But it can be made from salicine by acting on that substance with bichromate of potash and sulphuric acid.

In making the artificial acid it is of great importance that the carbolic acid be very pure, for if cresotic acid or such like contaminations be present, very different products will be obtained. If potash be used instead of soda, parabenzoic acid, a comparatively inert substance, is formed. I have no doubt that it was the want of proper knowledge and care in the preparation of this acid as it first appeared that gave to it its dubious fame. Several cases were at that time reported where twenty grains given at short intervals caused wild delirium, which is by no means a symptom of salicylic poisoning.

Heat resolves salicylic acid into carbolic and carbonic acids.

$$C_7H_6O_3 + \text{heat} = C_6H_6O + O_2$$

Von Heyden's acid, manufactured according to Kolbe's patent, is in white flaky crystals, having a pinkish hue, has a slightly bitter acid taste and gives a distinct acid reaction to litmus. It is very insoluble in cold water, freely soluble in hot water and rectified spirits, one ounce of the latter taking up seventy grains of it. Almond oil and glycerine will each dissolve about ten grains to the ounce. It forms combinations

with bases, of which those of ammonia, soda, quinine, and iron are the most important. Salicylic acid has been tried in surgery, but not being volatile it can never replace carbolic acid as a spray basis. It, however, may be used with advantage as a dressing in cases where boracic acid would be employed, as in ointment, lint, bandages, and such like.

Wagner recommended it in eczema of the head and face, also in combination with Fuller's earth as a dusting powder in erysipelas. A solution of it in spirits of wine, added to water used for sponging the aged, acts as an unfailing remedy in destroying the *pediculus corporis* that is often such a source of annoyance; it being free from smell, can be used without the patient's knowledge. As a local application in powder and solution, it has proved very successful in the treatment of foot-and-mouth disease in cattle.

As a preservative of vegetable substances, vegetable tissues, infusions, liquors, syrups, lime juice, wines, and such like, it has no equal, effectually arresting fermentation and decay.

Its proper sphere, however, is in medicine, as an internal disinfectant, a destroyer of the germ life that gives origin to so many diseases. As far back as 1875, Wagner wrote "That the use of salicylic acid is highly promising as a prophylactic in all diseases in which it is believed that the morbid processes are connected with microscopic organisms." "In diphtheria, not only is this acid a powerful restorative, but it also appears to shorten the course of the disease;" all recent experiments confirm this opinion, and widen the range of its application.

In the experiments of M. Pasteur as to the part that bacteria play in the causation of splenic fever and chicken cholera in France, he found the blood of infected animals to swarm with these organisms, and from this diseased fluid he prepared a vaccine virus which, by inoculation, protects the animal from the disease, for some time at least. The extensive scale on which he is at present operating with such unfailing success opens up a wide field of inquiry. In the soil over places where diseased animals had been buried he found splenic fever bacteria, and that ten years after their interment.

The researches of Professor Tommasi Crudeli on the malarial fevers of Italy have shown that the *bacillus malarie* is the true cause of this disease, and that this micro-organism is a product of the soil; other observers have also found this same bacillus in the blood of patients suffering from the ague of the Pontine Marshes. Crudeli says, "That in the malarial districts the multiplication of *bacillus malarie* takes place under three conditions—namely a temperature of about 68° F.;

moderate but permanent humidity, and the direct action of air on all parts of the mass; if any of these factors are wanting, the development of the sporules is arrested." In tropical regions how often are these conditions fulfilled, and with similar results; outbreaks of yellow fever, ague, cholera, and such like appearing now at one place, then at another, none knowing from whence they come. And at present we have here these conditions displayed in the continuance of mild moist weather, with occasional gales of wind, with the result of sporadic outbreaks of influenza, of typhoid and scarlet fevers in the different centres of population.

Our infectious fevers, typhus, typhoid, and scarlet fevers, diphtheria, &c., are all assignable as taking origin from putrescent animal matter, defective drainage, and suitable atmospheric conditions, all marked by the presence of bacilli, the same high temperature so inimical to life, and each with its own well defined train and duration of symptoms. The success that has attended Professor Lister's application of carbolic acid to surgery, whereby he destroys the floating germs that are ever present in the air, and so prevents them from entering open wounds and parts whose vitality has been lowered, has suggested to many minds the possibility of using this acid internally in the infectious fevers, and thereby destroying the germs that cause them; but the many dangerous symptoms that have arisen from its absorption where it has been only used as a dressing shows that it is not suited for this purpose. Salicylic acid and its compounds, so far as has been tried, have proved themselves both safe and efficient.

Dr. Weise, of Berlin, is at present using it with remarkable success as a spray to the throat in diphtheria, with benzoate of soda internally.

Dr. Burggreve, of Ghent, has had good results from it, given as a lemonade in typhoid fever.

Dr. Bouger has tried it in small-pox, and thinks that it lessens the eruption and diminishes the fever of suppuration; he gives it in doses of about 3 grains every four and six hours. About two years ago I had it tried on board ship as a preventative of yellow fever in the West Indies, the results of which I published in the *Glasgow Medical Journal* of May 1880. All trials of it since in the same disease have been eminently successful, proving it to be a prophylactic, and cutting short the fever when caught at its first symptoms. It was given in 5 grain doses. Since then my experience of it in our home infectious fevers has been highly satisfactory. In some bad cases of scarlet fever in children, its powers were displayed in

a remarkable manner, in that it arrested the fever on the fourth day. It was given in 1 grain doses (combined with iron) every two hours; with the effect of reducing the temperature 1° in every twelve hours; the only peculiar effect observed in all cases was, that on the reduction of the temperature to the normal, the pulse also became slow and very weak; on stopping the medicine and giving beef tea, this soon righted itself, but fever did not return; as a prophylactic it was successful so far, in that when it did not entirely ward off the disease, it reduced the virulence of the attack, shortening the period of fever, and modifying the other symptoms; in no case where it was properly used did the fever extend beyond the fifth day. The effect of it on the alvine secretions was very marked, no aperient required to be given, and the evacuations were not abnormally offensive. In typhoid fever this was even more apparent. Convalescence in all cases was rapid and complete.

In pneumonia and in the fever of erysipelas it answers well.

In bilious dysentery, and in all cases of fermentive derangement of the alimentary canal—especially in those cases so frequently met with in children fed on the bottle—it is easily made palatable, and always efficacious.

In influenza fever it is the remedy, &c.

When judiciously pushed, that is, when given frequently so as to be absorbed in greater quantity than the system can eliminate, it becomes in a manner cumulative, and in children especially it depresses the heart's action and lowers the pulse; with such powers it becomes valuable in all febrile states. Salicylic acid is eliminated unaltered by the kidneys, and can be easily detected in the urine twelve hours after any of the salicylates have been taken. The urine of fever patients treated with it becomes quite disinfected by it, and will keep free from fungi and change for many days.

I think a great mistake is often made in giving the salicylates (and many other medicines at present) in too large doses, whereby, while trying to relieve one function we disturb others, and that the object is better attained by giving small doses frequently over a longer period of time.

Of the combinations of this acid, I find that with iron to be the most efficacious in fevers; the iron itself is a disinfectant, and a good astringent to the relaxed tissues of the *prima via*; in fevers also iron is an element of the blood which is apt to become deficient in the destruction of the blood plasma that takes place, and we lose the benefit of its powers to convey oxygen to the system.

This I have observed in many cases of fever treated with the iron mixture, that while the salicylic acid was abundant in the urine, the fæces showed no traces of the iron; the same amount of it given in non-febrile states would blacken this excretion in a very short time.

Salicylate of soda has almost taken the place of a specific in rheumatic fever, but there the secretions are in a highly acid state, and a neutral or alkaline menstruum is what is demanded.

In the infectious fevers, however, the tissues are in a state tending to alkalinity, and as such, the best pabulum for the fructification of bacterial sporules. We therefore want a fluid that is both slightly acid and mildly astringent, and this an iron salicylate solution can be made to be.

If M. Pasteur can protect from deadly fevers by inoculation, each kind of fever requiring its own vaccine virus, it becomes a much simpler method if we can prevent and arrest all infectious fevers by a simple and not unpleasant drug; others with similar powers may yet be found.

If there is any truth in the bacterial origin of fevers, or that in the fermentive processes involved, micro-organisms are generated; these at least are undoubtedly present whether as cause or effect. It is certainly more rational practice to try and render the patient an unsuited soil for their growth and so stop their career, than merely to watch them passing through their life-course and die their natural death, often killing the patient in the process.

ON SOME POINTS CONNECTED WITH THE MANAGEMENT OF LABOUR.

By JOHN S. MAIN, M.D., MANCHESTER.

IN the consideration of labour, it is well, I think, to regard it as a normal physiological process, in which nature is the active agent and ourselves the mere onlookers. In other words, that our interference is only required when nature—for some reason or other—fails to accomplish her usual amount of work; and that then our interference is based on the lessons we have formerly derived from her teaching. For the art of obstetrics (like some others) is not only an art

“Which shares with great creating nature,”

but also one

“ Which does mend nature—change it rather—
But the art itself is nature.”

Based on this principle, our services during the progress of labour are often invaluable.

In the first place, and I intentionally give it the preference, as being a point often overlooked, I would mention the importance of keeping up the power of the system. This, as I have already said, I believe to be a point often overlooked ; and perhaps more so than would be the case were it not that our patients themselves don't always see the advisability of attending to it. Perhaps in no other physiological process is so much nerve energy lost as during labour, and when we bear in mind that this is continuous for from six to eight, or even more, hours, according to the case, certainly something must be done to make up for this drain on the nervous system. If this be neglected, what follows is, that as time wears on the woman's strength wears out. Further on—for want of replenishing—the lamp of her nervous energy begins to wane, then flickers, and finally goes out altogether, leaving her entirely helpless, and necessitating *instrumental* interference—in short, leaving the whole muscular system powerless, and the uterus in a state of *inertia*.

This is a state of matters well known to us all, and moreover, a state of matters which, in spite of every attention on our part, will in some cases follow. Still, this is certainly the exception, and much may be done in the way of avoiding it.

With this object in view, I have tried several methods. Amongst others, the administration of strong infusions of tea or coffee, of beef tea, of a combination of rum or brandy, and milk. None of these methods, however, did I find exactly suitable. The first I found certainly to be stimulating, but not affording sufficient nutriment ; the second often caused sickness ; and the beef tea could not be taken, besides not being often procurable ; the third, on account of its containing alcohol, I soon discontinued, as I thought on several occasions harm had resulted from its use.

Lately I have been in the habit of using equal parts of milk and strong infusions of tea or coffee, and with unvaried success. This combination supplies both stimulation and nutriment in a simple form, is always at hand, and is, moreover, a mixture which few patients object to. I leave it to be tea or coffee, according to the preference of the patient, though I am inclined to think that of the two the coffee is the most

beneficial. This I give in quantities of not more than half an ordinary teacupful at a time, pretty warm, and without sugar, during the continuance of the first two stages of labour. Stimulation, also, by means of words—encouragement I mean—must not be forgotten, especially in dealing with first labours, as, naturally, these patients tend to become fretful and discouraged. At all times, and in all diseases, hope is a good stimulant; and especially is it so here. On this point, Coleridge has well remarked, “he is the best physician who is the best inspirer of *hope*.”

During the first stage of labour, a difficulty often met with is a rigid condition of the os uteri. To relieve this, I know of nothing better than a full dose of hydrate of chloral—30 grains. This sometimes puts the patient to sleep; but whether or not, it almost invariably, in the course of an hour or two, brings about relaxation. Another very effectual plan is to allow a stream of rather hot water to play against the os uteri, by means of a vaginal douche. Ergot in these cases certainly does harm, and this, I think, cannot be put in too strong terms.

Another difficulty sometimes arises, from lateral or forward displacement of the uterus. The latter, of course—pendulous uterus—only occurring in pluriparæ, and both these conditions, hindering or retarding labour, by the force of the uterine contractions being directed at a disadvantage. Where the displacement is lateral, perhaps the best help is got from the hands, placed one on each side of the uterus during contraction, so as to bring it into the middle line; where forwards, by keeping the patient on her back, or putting on a binder. Other difficulties and their management are too well known to need even referring to here. At the termination of the second stage, where there is much delay in the revolution of the head round the os pubis, threatening instrumental interference, I have found much assistance from the following manœuvre, which I have not found described in books. It is this—During the pains I get the forefinger of my right hand inserted between the head and the os pubis, and hooked round the protuberance of the occiput. Having done this, I make traction with this forefinger, and the occipital protuberance is generally prominent enough to allow of this; while, with the forefinger of the left hand, I make pressure well forwards in the central line of the head, so as to increase the flexion of the chin on the chest. With the aid of this manœuvre, I have succeeded in getting the head born in the course of a few pains, after the occiput had reached the

os pubis. This is, in my opinion, a method much to be recommended also in all cases where there is a tendency to rupture of the perineum, as by increasing the amount of flexure of the chin on the chest, and lowering the occiput it takes the pressure considerably off that part. On the birth of the child, and the removal of the placenta, it is well to give in all cases, by way of safety from hæmorrhage, a full dose of ergot, and to put on the binder. Strict quietness should also be enjoined, the room darkened, and the child put to the breast.

For the relief of after-pains—often so troublesome to primiparæ—I have found nothing so beneficial as the “red mixture” recommended by Dr. Graily Hewitt, consisting of tincture of lavender, spirit of sulphuricæther (Lond. P.), spirit of chloroform, and camphor water.

Lastly, as it is a well known fact that sore nipples, not only interfere with the proper emptying of the breasts, but also tend by sympathy to lead to inflammation and abscess, besides being excessively annoying and painful to the mother, it is well that this condition should be put right at once if it exists. For this purpose, I know of nothing more serviceable than the lotion recommended by Dr. Playfair, in his *Treatise on Midwifery*, of which this is the formula:—

R.	Acidi Sulphurosi,	ʒss.
	Gly. (c) Acidi Tannici,	ʒss.
	Aq. Ad.,	ʒij. ℥
	Sig. The Lotion for the Nipples.	

NERVE-STRETCHING IN A CASE OF LOCOMOTOR ATAXIA, WITH GOOD RESULT.

By GEORGE BUCHANAN,
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REPORTED BY HOUSE SURGEON, ANSTRUTHER DAVIDSON, M.B.

As the operation of nerve-stretching for this affection has not been previously performed in the Western Infirmary, and as it seems to be but yet on its trial, no clear indications being given as to what specially ought to guide us in the selection of cases for the operation, I am induced to publish the details of this case in the hope that it may prove a useful addition to the literature on the subject.

D. R., æt. 51, was admitted, 29th December 1879, into Prof. Gairdner's wards, and from careful notes then made by him the following is a summary.

He had entered the army at 17, and served in it for 25 years, after which he had been chiefly employed as a labourer. Two years ago, when his employment necessitated his standing all day up to the knees in water, he first began to have a feeling of numbness and coldness in his feet, tending to spread up the legs. Almost contemporaneous with this, he suffered from attacks of most severe pains, like "flashes of lightning," as he himself expressed it. In the interval between these attacks he had a disagreeable and slightly painful sensation of lateral grasping of the limbs present night and day, to a greater or less degree. The lightning pains, at first limited to the legs, soon after extended to arms and body. About this time, too, he began to suffer from a feeling of tightness round the waist, indicated with great precision as corresponding in level with the hypochondria, and associated with burning pains inside the ribs. Then followed a history of evanescent erythematous, or urticaria like patches on skin, and nine months after the commencement of his illness, ataxic symptoms showed themselves. The first sensation he seemed to have had of actual difficulty in walking was a heaviness in lifting his feet, and also a feeling as if the feet were slipping from under him, these disabilities gradually increasing, and being notably greater on dark nights. His mode of progression was at that time sufficiently characteristic of an early stage of locomotor ataxy, although, as yet, there were none of the stamping movements of the advanced stage, he walked on rather a wide basis, with toes turned outwards; and when desired to walk even on three planks, 10½ inches, his difficulties were notably increased; on two planks, 7 inches, it was absolutely impossible for him to make more than an attempt at it for a few steps. When standing with eyes shut and feet close together, though swaying very much, he was able to keep from falling. There was slight anæsthesia of the fingers of both hands. He suffered continually from subjective noise—buzzing and ringing—in left ear. There was slight irritability of the bladder, the desire to micturate coming on so suddenly, that occasionally urine was voided in his dress. The sexual power had been much affected of late. The procreative power did not show any sign of failure until the power of intercourse was also disappearing. Both pupils were contracted, more especially the left, which measured 1½ millimetres; the right, 2½. Tendon reflex was absent.

As to causation. Sexual excesses had been indulged in to a great extent, but careful analysis of his history failed to connect this with an irritability of the genital organs as among the early symptoms of the disease. He had suffered from one attack of chancre at the age of 19, the scar of which is now very indistinct, but does not seem to have been followed by any constitutional symptoms.

On 5th March, 1880, he was dismissed, slightly improved in walking, and suffering less from the lightning pains, but the uneasy tight sensations in his legs were as persistent as when admitted. The girdle pain was greatly diminished, and sometimes not felt at all. The treatment was nitrate of silver, $\frac{1}{2}$ gr. thrice daily.

On 2nd April, 1881, he again sought admission into the hospital, and this time came under the care of Professor McCall Anderson.

The ataxic and other symptoms were more pronounced, but otherwise no change. As his condition at this time was but little changed, it may be passed over; and it is sufficient to state that, under rest and syrup of phosphorus, he showed some improvement, and he left the infirmary on 19th June, his departure being hastened by Dr. Anderson proposing nerve-stretching.

On 8th November he was again admitted under Dr. Anderson's care, and was willing to have anything done that held out hopes of relief.

The ataxic symptoms were now very pronounced. He was unable to walk without the aid of a stick or crutch, and while in the ward had to be assisted to the bath room by one of the patients. The uncontrollable jerking of the legs led to marked stamping in walking. Standing with feet close together, with or without the eyes shut, was impossible. The sensations of numbness and "prinkling" were very troublesome; he felt like walking on "india-rubber balls," as he himself expressed it. The cording round the waist was leading to an impediment in his breathing, and he associated with it a pain, sometimes very acute, in the region of the heart. The painful feeling of constriction in the legs, which had been one of the earliest symptoms, was still much complained of. The lightning-like pains attacked him on an average once in three weeks or a fortnight, and affected all the limbs. In both palms the palmar fascia is contracted, and fingers cannot be fully straightened, and he attributed this condition to the frequent attacks of these acute pains which led to contraction of the fingers—at first temporary, then permanent. There was slight

numbness of the fingers, but this had not apparently increased since first admitted three years before. The noises in left ear, previously noted, still continued.

The contraction of the pupils existed to the same degree as before stated.

The bladder showed slight irritability. Bowels were regular.

His mental powers had begun to show slight symptoms of decay. He was irritable and cross, discontented with everything that was being done for him. His wife had stated that, whereas, prior to his illness, he was quiet and good tempered, he had lately become very quarrelsome and irritable.

Such was his condition when admitted under Professor Buchanan's care, who, at Dr. Anderson's request, performed the operation of nerve-stretching, on left sciatic nerve on 2nd December. The nerve was exposed by an incision 3 inches long, an aneurism needle was passed under it, and then, with the finger, it was pulled with force sufficient to raise the leg slightly off the table, the nerve receiving a few sharp pulls, first towards spine, then towards the extremity.

While under the influence of the anæsthetic the pulse was doubled, and breathing was stertorous, but no change was produced in either by the nerve-stretching. The wound, dressed antiseptically, was brought together by shields and wire suture. One grain of opium was given at bed-time to allay pain felt at the wound.

3rd December.—This afternoon severe lightning-like pains were felt in both legs, and in his excitement he tore off his dressings and removed the shields. Wound was dressed with boracic and vaseline ointment.

On the 4th and 5th, the pains, still continuing, were relieved by occasional opiates, and on the 6th disappeared, only to return with greater intensity three days later, when the pains were much complained of, but more in the right than in the left leg, whereas they were previously most marked in the left.

10th December.—Pain still continued, bandage and sutures were removed by patient during the night, and wound was found gaping this morning.

11th and 12th December.—Pains still severe, but only affected right leg. When the left leg was held out it was observed that the muscles, contracting singly, performed motions exactly like those seen in athetosis. This athetosis-like movement he first observed on the 10th. On account of the freedom from pain in the left leg, he asked Professor Buchanan to operate on the other.

15th December.—Has had few pains in legs, but complained much of pains in pelvis and perineum. He had become weaker, and was now unable to stand upright when taken out of bed. He called attention to a fact he had noticed two days ago, that the right leg is cold, while the left is quite warm. This was plainly the case, as far as testing with the hands went but unfortunately the surface temperature was omitted to be taken. The wound meanwhile had been only slowly healing, and looked altogether in a very atonic state.

23rd December.—Operation performed on right leg in the same manner as was done on the other. Next day he suffered from severe pains in all his limbs, and it may be here noted that the pupils now did not dilate when pains were present as they used to do.

25th December.—He suffered from exacerbation of the girdle pains, and under the impression that the bandages were the cause, he pulled them off and removed the sutures from the wound, as he supposed they were pins pricking him. The wound was sutured, but next night he removed them again. No tendency to healing of the wound, and no exudation between the flaps was observed. He suffered no pain, but his mental condition had now become such as to necessitate a special attendant being constantly with him, as he did not seem to know at times what he said or did. He was so weak as to be almost unable to raise himself in bed.

6th January.—He removed the sutures through the night, and the gaping lips of the wound showed the tissues underneath, without a granulation on the surface.

On account of the irritation consequent on his sometimes passing urine and fæces in bed, a large abscess formed deep in the cellular tissue, which was opened two days later, and strings of cellular tissue withdrawn. Poultices were then applied. In about a week after another such abscess appeared on right buttock, and was treated in a similar manner.

20th January.—Wound now began to contract, and he was getting stronger. Mental equilibrium is being gradually restored.

12th February.—He was able to be up and walking a little in the wards. The abscesses had healed, but the wound over right sciatic was still somewhat large. He himself called attention to the girdle pains having vanished, not having been felt for a week past.

14th March.—Since last note steady improvement has been made, and his condition now may be noted and compared with that before operation and when first admitted. *First, as to*

sensory affections.—Ever since the beginning of his illness he had suffered from a feeling of lateral compression or constriction in the legs, and “cording” round the waist, which caused him difficulty in breathing. These sensations, prior to the operation, he never had been free of, and distinguished them as being entirely different in character from the lightning pains which only affected him periodically. This painful constriction in the legs has entirely disappeared, as has also the “cording” round waist, leaving breathing free and unimpeded. The “prinkling” feeling is not now so marked. The numbness of the legs persists as before operation, but minus that feeling of coldness with which it was previously associated. The lightning-like pains have not as yet recurred. The contraction of the pupils is unaltered. The subjective noises felt in the left ear ever since almost the commencement of his illness are not now felt. *As to locomotion.*—The improvement here is very marked; whereas he was unable to walk before the operation was performed without some support, he can now walk as well as he could when first admitted three years ago. He can walk without much staggering on three planks, a breadth of $10\frac{1}{2}$ inches, and can even go a short distance on two. Previously, on attempting to walk, his legs jerked excessively, and the stamping was very marked, but now his gait has been very much altered; he no longer bends forward, but goes almost erect, with cautious step, and almost no stamping.

Slight irritability of the bladder still exists, and a feeling which sometimes compels him when micturating to evacuate the bowels at the same time.

The greatest improvement has been shown in his mental condition, which, compared now with his demented state after the second operation, exhibits improvement really marvellous. From being discontented, irritable, and quarrelsome he has become patient and inoffensive as before the onset of his disease.

The reflexes have been uninfluenced.

One new symptom, however, has arisen since the operation which deserves notice. On 11th Dec., after the first operation, an athetosis-like movement was observed in the leg, the foot first flexing, then each toe, beginning with the fifth, contracting forcibly, slowly, and rhythmically. Since the second operation it was noted to be occasionally present for short periods, but on 6th March he was thus affected for four hours, during which there was no cessation of the movements. These motions were uncontrollable and unassociated with pain or

uneasiness, but produced increased unsteadiness in walking. This attack passed off without any treatment, and he still suffers every day or so from it for about an hour. The significance of this symptom, if any significance is to be attached to it, I do not pretend to explain; but whether or not it is the forerunner of paralytic symptoms, it is of interest as being the first case of locomotor ataxia in this Infirmary in which such movements have been observed. Its appearance immediately after the operation leads one to associate the two as cause and effect, a factor of interest, as bearing on the result in another case of nerve-stretching, which was performed last week in this hospital in which these athetosis-like movements were present to a high degree for months before the operation.

So far this case of nerve-stretching, the first performed here for locomotor ataxia, has borne out Benedikt's remarks—that it is capable of converting an advanced into an early one, for in this case the ataxy has been so beneficially affected as to render his motor in-co-ordination less marked than it was three years previous. The relief from the pains, not only in his legs, but his arms and stomach is absolute, and the disappearance of the girdle pain and the subjective noises in the ear is of interest, as bearing on the theory of the stretching influencing the cord, as in no other way can the disappearance of these symptoms be satisfactorily accounted for. If the ear symptoms were due to the auditory nerve, or its nucleus being involved in the diseased process, is it to be assumed the stretching of the nerve could have had any direct influence on it; if so, is it stretching the point too far to suggest the capability of its having directly and beneficially affected the cerebral centres as in this case? The doubt here suggests itself as to how far the mental condition was secondary to the irritation consequent on continued suffering, or to the presence of disease in the cerebral centres.

The slow healing of the wounds in this and other cases may be in part accounted for by their position subjecting them to undue pressure, and the presence of anæsthesia of the skin leaving patients unconscious of pain where any undue irritation or pressure was exerted on them. This at least suffices to explain, in part, the lengthened period taken to repair the second wound in this case; but these wounds seemed all through to show little activity, there being little or no exudation of plastic material as in other wounds, less tendency for granulations to form—in the

last wound nearly two weeks elapsed before one was seen—and but slight discharge of pus. Judging from the many severe tests this patient's wounds received at his own hands, they were not by any means prone to inflammation from irritation.

The mental state of the patient has not previously been mentioned as a bar to the performance of this operation, and this case may act as a warning. It is questionable whether it is advisable to operate in any case where marked mental disturbances show themselves.

"HEALTH RESORTS AT HOME AND ABROAD."

By MATTHEW CHARTERIS, M.D.,
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An old Bath guide says—

" Arise betimes, to pump repair—
First take the water then the air ;
Most moderate be in meat and drink ;
And rarely, very rarely, think."

The reflections contained in this rhyme pretty accurately differentiate the state of mind that should be entertained by visitors to mineral spas and health resorts. And on analysing the refrain it will be found that a good deal of worldly wisdom and professional acumen is contained in the melodious jingle of words.

Early rising is associated in the great majority of cases with an entire change of personal habits. Early rising means an early hour to rest, and this again betokens an absence of those amusements associated with late hours. It necessitates an early dinner and a frugal supper, and it guarantees a healthy sleep and no nightmare of indigestion.

It presupposes, further, rising with an object, and that object is one which is dear to every one—viz., restoration to health. Tell the wearied victim of bile and vomiting to bestir himself, and then he will have relief. Advise him to walk before breakfast for an hour or two and he will smile at the ingenious suggestion. Associate, however, the early rising with an ostensible object and a palpable result, and the way is cleared for the reception of your injunctions.

"The drinking of the waters of the spa recommended dislodges," the adviser will say, "the *materies morbi*. This feat must be accomplished at an early hour or no benefit will ensue. So authority has always testified, and who can dispute experience sanctioned by all time."

The antiquity of health resorts in general, and spas in particular, as means of combating disease is undoubted, and though medical theories have come and gone, and medical tenets have often been exploded, yet no crusade in any age has ever been preached against health resorts.

There lingers around them a superstition deep grained in man's inner nature. An apothecary's mixture is a work of art, often nasty, frequently unseemly. It is Nature's handiwork which is carried to the lips, pure and sparkling from the fountain of the well.

In Heathen days it was fancied that an Eudaimon or healing spirit lingered at the spot, and this idea was not confined to peasants or the illiterate, but it was fostered and stirred to active life by the wise men of the day. Van Helmont, the erudite and sceptic, who purged medicine of many superstitions in gay and fantastic language, pictured this beneficent deity, and Horace promised, in the most charming of all his Odes, a libation of wine and garlands to the

—"fountain of Bandusium,
Splendidior vitro, clearer than glass."

In Christian times a relic of the old belief exists, and wells, in certain parts of Derbyshire, are still decked in the early summer by flowers, tastefully arranged by fair village maidens, and the clergy bless the simple rite with holy prayer. Curative wells are still known in Cornwall, and miraculous powers were assigned until the beginning of the present century to Glastonbury. "Thither resorted," says an old chronicle, "numbers of people to drink and bathe, in consequence of a dream of a certain person afflicted with asthma, who was cured by taking it. Some believed the virtue of the water was owing to its passing over the graves of holy men."

This superstition attached not merely to wells with actual mineral ingredients, but even to others when the water was pure and simple. Thus the Holy Well at Malvern was employed for various skin diseases.

"Those who employed it," says Dr. Hall, "went in with their linen on and dressed upon it wet. This method, odd as it is, I have never heard was attended with any ill consequences."

So also at Magnus Well at Harrowgate. Says Dr. French, "Many tender women who dared scarce venture to wash their hands in cold water will adventure to go into it—although it be colder than ordinary water—with their linen on, and when they come forth go to the next houses and lie in their wet linen all night, and thereby are cured of many old aches, and swellings, and hard tumours, and rheumatic pains."

While acknowledging that superstition has invested even cold water with curative powers, it is yet certain that therapeutical value has in our country undoubtedly centred in earthy and thermal springs. To what places, then, in Great Britain must we ascribe from custom and age, and other peculiarities, the merit of being medicinal waters? Certainly the first position must be ascribed to

BATH.

Our first conquerors, the Romans, appreciated its waters, and from the time of the Roman Conquest Bath acquired great notoriety. A Leper Hospital was attached to the Abbey of Bath in the 11th century, and there unsightly beings congregated and were supposed to regain the hue of health.

In succeeding centuries, down to 1613, various writers testified to its virtues. The Queen of James I visited the town, and with royal prescience saw a flame playing on the surface of the water; and hence, in honour of the vision, it was termed

THE QUEEN'S BATH.

In subsequent years the Court visited it, and amusing stories are told of regal gaieties and aristocratic scandals. Balls, fancy and dress, were of weekly occurrence. Hither men of all degrees congregated.

Goldsmith tells "How philosophers and players, fiddlers and chemists, ministers of state, and bishops, judges, and generals rubbed shoulders with one another, and how in the promiscuous crowd one was sure to meet some friend."

He also states "How hard by the pump room was the coffee room for the ladies; and the bookseller's shop was also near. There novels, and plays, and pamphlets were read for the small subscription of a crown a quarter, and there all the news of the day are discussed. From the bookseller's shop we make a tour of the milliners and toymen, and generally stop and have something to eat at the pastry cook's.

"After all, the great scenes of entertainment at Bath are the public rooms where the company meet alternately every

evening. They are spacious and lofty, and are generally crowded with well dressed people, who drink tea in separate parties, play at whist, walk, or sit and chat together, as they are disposed."

So in genial, and doubtless truthful, language does Goldsmith describe the pleasant life in his time at Bath; but since then Continental health resorts have robbed Bath of much of its glory, and it has sunk from a position of unrivalled notoriety to be simply a comfortable and desirable place of residence. Its waters have been much neglected, but there are signs of returning prosperity, and some assert that Bath may yet regain its pristine fame.

What, then, are the waters of Bath? The answer to this enquiry may thus be stated. Bath possesses hot springs, the temperature varying from 120° to 140° Fahrenheit. They contain as essential ingredients, muriate of lime and muriate of magnesia, sulphate of lime and sulphate of soda, a small proportion of iron. In all, fourteen grains of solid matter being found in the pint, and with this a cubic inch of carbonic acid.

The taste of the water is not unpleasant, and it appears to produce some sensible effects—a glow in the stomach, a warmth in the head, gentle perspiration, and slight diuresis. The water is clear and colourless at first, but assumes after settling a wheylike appearance.

The waters are used either externally or internally, and by the former method Bath attained its high reputation. The old physicians recommended the bather to remain in the water at least an hour, but this prolonged immersion was found to be weakening and unnecessary, and it is now deemed advisable to prescribe a duration of 15 minutes. The temperature of the first bath should be 96, and on subsequent occasions it should not rise above blood heat, 98 degrees. During the bathing, movement as active as age or infirmities permit should be resorted to—the arms and legs being kept in constant motion. On leaving the bath the patient is enveloped in a warm sheet, and should be allowed to rest on a couch for a quarter of an hour before being rubbed and dressed. The bath is generally taken an hour and a half after breakfast, and it is strictly forbidden after long fasting or bodily fatigue.

Used as indicated, the external use of the Bath waters has been found beneficial in various forms of paralysis, notably lead paralysis, and against the "pulls" and "twitches" of sciatica. In flying gout, *i. e.*, gout which does not fix itself in

any particular place, they have long been considered serviceable; and also in all the varieties of chronic rheumatism.

Internally the waters are taken, but as a rule not until they have been employed some time externally. Acting slightly on the kidneys, they are given in irritable bladder, or for the dyspepsia associated with gout.

In irregular menstruation they are serviceable; and their reputation at one time was great in sterility.

Containing, as they do, lime, they are found to be rather constipating; and it is advisable to combine them with some aperient medicine, or to come to Bath after a course of laxative waters.

From a pint to a pint and a half of the water is taken in the course of the day, in divided doses.

The time of the year best adapted for Bath is probably the winter, as it is well sheltered, and the mean temperature is nearly 3° higher than London.

MATLOCK.

In the middle of last century Matlock became famous. Visitors were attracted to it by the scenery. The combination of wood and water and rock, its high position, and the cool bracing air rendered it a charming residence for those who were enervated by the bustle and the worry of city life. They were also drawn to the place in some instances by the cheapness of living. So cheap was it in former years that three shillings a day covered all the expenses of meals. It was also a social place. The stern hand of etiquette had laid no barrier on pleasant intercourse. Visitors seemed to live as one family. They breakfasted, dined, and supped together, and joined in pic-nics, which were deemed the perfection of out-door enjoyment.

The waters of Malvern would be chemically pure, were it not for a slight impregnation of lime. In colour clear and sparkling, and with a temperature of 68°, the freshness and the purity of the water render it a pleasant diluent and ensure "to the invalid that, while it may probably prove useful, it cannot possibly disagree."

The internal use of the springs of Malvern is not greatly recommended or taken to any extent, their fame resting chiefly on their well known bathing advantages.

Employed thus they are serviceable in chronic rheumatism, and they are said to be specially advantageous for the perspiration associated with hectic fever.

BUXTON

Lies within twenty miles of Matlock. The drive between the two places is described as cheerful and delightful, and not unlike the pleasant and shaded ways familiar to the tourist in Saxon Switzerland. Buxton seems to have been known to the Romans, and some consider that in this respect its claims to priority are superior to Bath. Before the monasteries were suppressed, wearied pilgrims journeyed to its holy well, and were supposed after bathing to be freed from many chronic ailments. Historically, it is noteworthy that Mary Queen of Scots visited it, and her stately beauty rendered less comely dames jealous. Her steps seem to have been watched by emissaries of Elizabeth, and even gracious kindnesses to servants were suspected and noted. Elizabeth herself seemed to have confidence in the Buxton waters; and when the polished Burleigh was sick, his stern mistress took him to Buxton and commanded him to drink of the spring. He evaded the mandate at first, but afterwards mixed the waters with sugar and found them so palatable that he took cheerfully four or five pints daily.

Since Elizabeth's time Buxton has been a well known favourite health resort. Its elevated position, upwards of 1,000 feet above the sea level, and its cold, clear atmosphere constitute such thorough and effective barriers to disease that epidemics are almost unknown, and country surgeons in the neighbourhood aver that, were it not for the chill wind of March bringing with it various ailments, they would have a clean bill of health all the year round.

The Buxton water, like that of Malvern, is pure, containing only 15 grains of lime, soda, and magnesia salts in a gallon. Its temperature is 82° Fah., and it is largely charged with nitrogen gas. The supply of water is abundant, for it issues out at the rate of 300 gallons per minute.

The taste is sweet and pleasant, and its action is considered stimulant and alterative. In persons of full habit it sometimes produces flushing, giddiness, and headache. As a rule, however, the effects are not unpleasant, and the waters are taken easily and readily to the extent of two or three pints in the course of the day; the usual routine being that the first dose is taken half-an-hour before breakfast, and the second at one or two o'clock. Moderate exercise is enjoined immediately afterwards. They have been recommended in weak digestion and in chronic catarrh of the bladder. In former times they were considered useful in diabetes and asthma, but later experience has not confirmed their reputation in this respect.

The waters of Buxton are, however, chiefly prized for their external use, and the Buxton bath is greatly lauded. The bath apartments are neatly and comfortably furnished, and the temperature of 72° or 74° is maintained. As the supply of water is copious, a constant influx and efflux is maintained, and this appears to lend variety and pleasure to the bather. The first sensation on immersion is said to be a slight shock, which soon however passes away, and the after feeling is agreeable, and described by some as being anointed with warm cream. The duration is ten minutes.

The Buxton baths are specially recommended in—

1. Gout.
2. Rheumatism.
3. Hysterical joint disease.
4. Sciatica and thickened joints.

Those afflicted with gout, in its chronic form, state that benefit may not be derived from the use of the waters at first, yet, on their return home, they always experience relief. Numerous well authenticated cases testify to their efficacy in chronic rheumatism, and many invalids can corroborate the statement by a sufferer who thus expresses himself—

“With joy and gratitude do I reflect on the efficacious qualities of the waters. I recollect with rapture the flight of pain, and the reanimation of my long, long crippled limbs.”

The season, it may be added, for Buxton is summer. It is too cold for a winter residence.*

CURRENT TOPICS.

INSURANCE BY MEDICAL MEN.—Every one will agree on the advisability of medical men looking to the future of themselves and their families in the way of making provision for old age or in case of death. An admirable scheme has been worked out by the Edinburgh Insurance Company, at the suggestion of Mr. E. C. Garland. According to this scheme a medical man, by paying a fixed annual sum (say £30, if he be 30 years of age), will secure the payment of £1,000 to himself at the age of 60, or to his heirs, should he die before that age. Then, if it be preferred, the £1,000 may be converted into an annuity, payable during his own or his wife's, or their conjoint

* This Lecture is the first of a series delivered to the Class of Therapeutics and Materia Medica, Glasgow University, Session 1881-82.—M. C.

lives, but, of course, varying in amount under these several circumstances. There is also the advantage in this scheme, that if a member should at any time cease paying his premiums the Company will pay, on his reaching 60, or at his death, a larger sum than he has paid in premiums. Thus, if a person, during seven years, has paid £212, he will receive at 60, or his heirs will receive at his death, £233. Our younger medical men would do well to consider seriously this question, and to enter into this scheme, or one of those brought forward by other companies, in order to meet the possibilities of the future.

REVIEWS.

On Cancer of the Breast. With Coloured Illustrations. By THOS. WM. NUNN, F.R.C.S.Eng., Consulting Surgeon to the Middlesex Hospital. London: J. & A. Churchill. 1882.

THIS work is chiefly valuable for the very excellent coloured plates which it contains. Both those which represent the naked eye appearances and those which reproduce the microscopic characters are unusually faithful representations.

The work is divided into two parts—the first, Clinical and Practical, and the second, Pathological and Speculative. But these are preceded by an Introduction which, in many respects, is better written than either. In this introduction the author discusses the general pathology of cancer from his own standpoint, and his position will be understood from the following quotations:—

“The forms of the disease are so varied, and so intermix, that a series of descriptive lines must needs converge and interlace. Everything in cancer is apparently so much out of order that definition must stop short at its elements, and its description can only be an account of the confused arrangement of disorderly component parts and the imperfect attempts at imitative formations. Essentially it is an ineffectual effort of development which ends in the production of tissue-monstrosities. There are in cancer no new elements, and the deformed results of the morbid growth from natural points of origin, are but divergences of normal tissue, some by exaggeration, some by defect, some by malposition, some by eccentric combination. Nothing is regular or determined; and if there

be order in this disorder, we have not yet discovered its laws or untangled its intricacies." * * *

"But how is it that all these conditions of cancer, presenting so many diverse appearances, can be shown to be essentially the same? Simply by histological examination. Deaths and operations give us the opportunity of investigating the minute structure of these tumours in all stages of their growth, and the result is a tolerably exact knowledge of the nature and disposition of their constituent parts and elements. By sections made after due preparation, we find them all to consist of countless multitudes of cells, for the most part having great activity of reproduction and very little developmental power; pushing their way among the ultimate elementary parts of tissues and organs, and there undergoing their abortive changes, or accumulating in groups among the meshes and alveolar spaces formed by the interlacing of the fibres and bands of fibres of a more or less perfectly formed kind of connective or fibrous tissue. Lymphatic action and the circulation of blood is carried on among these growths by a modified capillary arrangement; and the grouping of cells, stroma, and vessels presents to us simulacra of the organs, or imperfect imitations of the tissues among which they are found. In other words, we may describe cancer as the formation of cell-growths amongst the textural elements of a part, such cell-growth being of low vitality and short-lived. This cell-growth, so inherently prone to atrophy, either gives rise to atrophic changes in the textures in which it is generated, or, acting as a stimulant, induces a vascular outgrowth. Accordingly, there occurs either a slow wasting and shrivelling of the parts or a vascular hypertrophy, with great tendency to inflammatory action, which rapidly runs into gangrene—a gangrene which destroys *en masse*, as well as by the molecule." * * *

"In looking over these various forms of cell, we find them in almost every possible stage of growth, function, and decay. With some, there is seen the process of gemmation and constriction, announcing their immediate division. Nuclei, in others, are separating into two, and the line of a transverse partition is visible across the cell-space. Mother cells, again, are nearly filled with a young brood ready to escape, and elsewhere the protoplasm agglomerates into the spore-like corpuscles. Such a cell is in the state called by Virchow and Klein vacuolation, and is nearly at the end of its career. The nucleus has become obscured in the cell-wall, oil globules have formed in the void left by the contracting protoplasm,

which has resolved itself into a cluster of young endogenous cells or spores. Sometimes the contents are granular, and have fatty matter mingled with them, and the cell-wall is evidently in course of decay. Floating in the fluid among all these cell structures, there is the debris of such as have already perished, or been mutilated in the manipulation, with occasional fragments of the tissues to which they belonged, and a few blood-corpuscles that have accidentally escaped from the torn vessels."

In the clinical and practical part the various points of diagnosis, progress of the case, and treatment are discussed. Under this last head comes in the important QUESTION OF OPERATION, on which the author has many suggestive remarks, some of which we may quote.

"To get rid of a tumour *at once* by operation would seem a common sense proceeding; some consideration, however, is required, before taking this step. The theory that cancer is a local disease necessitates immediate operation, and those surgeons who hold and act upon this theory might reasonably be expected to produce an array of successful cases in evidence of the soundness of their views. So far as I am aware they have not done this. An indiscriminate action in operation will be attended, certainly, with a percentage of regrettable consequences, and the same may be affirmed of a headlong precipitancy in operating, upon the theory that the disease is essentially local." * * * *

"I have heard a surgeon, probably influenced, directly or indirectly, by Brodie's teaching, speak with bitter contempt of 'giving the patient a chance,' by operation in cancer. I have recorded an instance where I removed a fungus hæmatodes in the breast, of considerable size, and where the patient lived for five years subsequently in good health (Case No. 2, page 54, Mary Howard). It can hardly be imagined that without operation this patient could have lived a fourth of that period. The surgeon, to do justice to the patient, and to himself, should lay the exact state of the case before the patient, and the ground upon which the operation is recommended." * * *

"A striking example of the contrasting results of operation and non-interference fell under my notice. Two sisters had cancer of the breast; the elder (by a few years) unmarried, was first seen by me, had a cancer of the breast, which I removed. About two years afterwards there was some return of the disease towards the axilla, which was also removed; no local return ever occurred; the patient ultimately died without pain, from cancer of the liver. The younger sister,

who was married, but who had never borne children, also consulted me; she had a tumour of the breast. I advised its removal, but the patient declined to submit to operation. The tumour proved to be a cancer, and it ulcerated, and the patient died, having suffered great pain and misery for very many months from a widespreading sore. No two cases could apparently illustrate better the relative advantages of operation and non-intervention; the sisters, having strong family resemblances physically, both suffering from cancer in the same organ, and of the same character.' * * *

"When an operation has been decided upon, the removal of the entire mammary gland must be complete. Any partial removal is not only useless, but worse than useless; the occurrence of the slightest speck of cancer in a gland declares that the whole organ is more or less ready for special degeneration. I would here say in parenthesis that there are certain forms of cystic disease to which the same rule applies; that is to say, that, although the disease may appear to be isolated, it will be found insidiously extended to other parts (*vide* Case S—, page 46), where to the touch the disease appeared to be quite circumscribed, while it really involved the entire gland. The removal of the entire substance of the gland requires close scrutiny of the tissues through which the incisions have been made, as, especially towards the axillary boundary of the wound, outlying lobules of the gland may have been severed from the chief mass."

In the operation of amputation of the breast, Mr. Nunn uses antiseptic precautions of his own. He has the skin carefully rubbed with solution of carbolic acid during forty-eight hours before the operation, but he does not use the spray during it, and he has great faith in sulphurous acid in the dressing of the wound afterwards.

This part of the work is enriched by the careful description of a large number of cases, and a tabular statement of the results of *post-mortem* examinations of cases of cancer of the breast, 21 under the author's care, and 102 from the register of Middlesex Hospital.

The pathological and speculative part is not so good as the other portions. In it the author endeavours to give a statement of the various theories held by others, but is not very successful. Still there is much useful information here as to statistical averages, age, &c.

On the whole the work is a highly commendable one, and we are able heartily to recommend it to our readers.

Scrofula and its Gland Diseases: an Introduction to the General Pathology of Scrofula; with an Account of the Histology, Diagnosis, and Treatment of its Glandular Affections. By FREDERICK TREVES, F.R.C.S. Eng., Assistant Surgeon to the London Hospital, &c., &c. London: Smith Elder & Co. 1882.

THE author divides his work into two parts—Part I. The General Pathology of Scrofula. Part II. Scrofulous affections of the External Lymphatic Glands. There is, however, another division which, although not insisted upon, at once strikes the reader—viz., into a purely pathological part and a clinical part. In the pathological part a very good exposition of the views of various authorities on the nature of scrofula and tubercle is given, which, however, we think is greatly lessened in value, if not actually spoiled, by the somewhat contemptuous and overbearing way in which the writer rejects the views of those observers who are opposed to him; as when, in stating Rindfleisch's opinion of the relationship between scrofula and tubercle, he says, "such a distinction as this is cumbersome, and appears like pedantic elaboration." Or again, when, in speaking of Cohnheim's views as to the tubercular virus, he says, "it must be confessed that his explanations are at least fanciful;" and "it must be allowed that this is all but the wildest conjecture." We cannot help thinking that the opinions of two such veteran workers in pathology deserve more respectful treatment than this at the hands of one who, as yet at all events, must be considered a young member of the profession. This is one of our chief objections to this part of the work; but, in addition, we find it difficult to agree with some of the theories put forth, and, in some instances, we do not think that the arguments advanced prove the point. Again, some parts are rather confusing, and would perhaps mislead a careless reader. The chapter entitled "Scrofula and Tubercle," has for one of its objects, firstly, to point out the confusion which exists between the terms "scrofulous" and "tuberculous;" and secondly, to show that, "*anatomically*, therefore, scrofula may be regarded as a tuberculous or tubercle-forming process." While we agree in the main with this, yet we are of opinion that the author has not taken a very successful way of impressing the facts upon his readers—viz., by taking up the terms throughout the discussion in the clinical sense, and finishing it with the anatomical definition, part of which we have quoted above, especially when we find the following in the middle of the

chapter:—"I would almost go so far as to say that it would be well *not* to call it a tuberculous disease until the bias associated with the latter term has been removed, until that term is accepted in a more generous and rational sense, and until it ceases to attempt to force an alliance between an anatomical appearance and a clinical state." This is rather a confusing way of treating the subject, and the author has evidently felt the difficulty himself, as he finds it necessary to reiterate at the end of the chapter, in a special paragraph, the sense in which he has employed the terms. The view which Mr. Treves takes of the nature of tubercle is, that it is "the product of a peculiar form of inflammation; that it is no neoplasm in any other sense than that it is an inflammatory neoplasm." We cannot, however, agree with all the arguments advanced in favour of this view. We think it is doubtful whether it can always be "allowed that the process is at its outset inflammatory." It is not so "remarkable that throughout its whole course it should be so very frequently and intimately associated with inflammatory change," because tubercle acts as an irritant, and excites inflammation much in the same way that epitheliomata so often set up intense inflammatory action in their immediate neighbourhood. At page 27, we find Ziegler's experiments referred to as an argument in favour of the inflammatory view. But in the "tubercle," which made its appearance between Ziegler's discs of glass, vessels were necessary for its formation, whereas, at page 9, Mr. Treves points out a fact, which is admitted by all pathologists, that in simple submiliary tubercle "the affected district is non-vascular." The analogy, therefore, between the two cases is, to say nothing more, imperfect. We cannot, indeed, help thinking that the mere anatomical structure of the tubercle has had considerable influence in leading the author to his conclusions. The result of such views would naturally be to remove the idea of anything specific from tubercle, an opinion with which comparatively few as yet would be inclined to agree. We even suspect that the author himself has some difficulty in accounting for all the phenomena on the inflammatory hypothesis, from the frequency with which he makes use of the term "peculiar" in connection with it. We certainly think that the inflammation, or whatever may be the real morbid process connected with tubercle, must indeed be "peculiar," and far separated by its very peculiarities from inflammation, as we ordinarily understand that term. We cannot agree with the writer when he says

that giant cells are "peculiar lymph coagula." "They precisely resemble in every respect the giant cells sometimes found in chronically inflamed connective tissue, and that are located without doubt in the lumen of lymphatic vessels." In Ziegler's experiments, as Mr. Treves points out in another part of the volume, giant cells were found along with blood-vessels between the glass discs; but surely there could be no lymphatic system so well developed as thus to account for the existence of the giant cells in this case. "The appearance of fibrous matter in moribund giant cells has been observed." This may quite probably be due to the process known as coagulation-necrosis, or fibrinous metamorphosis, which can only occur in "protoplasmic masses" whose vitality has been lost. The difficult subject of "scrofula and acute miliary tuberculosis" is dismissed with the consideration that can be given to it in the space of a page and a half.

The clinical part of the work is, in our opinion, much more satisfactory. It gives a clear and lucid account of the etiology and symptomatology of scrofula, and specially of its gland diseases. We doubt, however, if the antagonism between scrofula and phthisis is so absolute as Mr. Treves would have us believe. He found evidence of scrofula in 7 out of 57 cases of phthisis which he examined, and doubtful evidence in, at the least, 3 other cases, which may perhaps bring the number up to 10. We have seen at least 3 cases of well marked phthisis during the present winter, with scrofulous cicatrices in the neck, in one of the wards of a general hospital. We also doubt if "*eczema* is, next to chilblains, the commonest skin affection of the strumous." In fact, we would almost feel inclined to take an opposite view to this. We have had the opportunity of seeing a large number of cases of *eczema* treated in public practice, and it was only very rarely indeed that any connection with struma could be made out. The chapter upon the treatment of scrofulous lymphatic glands is very good, and we would specially recommend to those who may be interested what is said about "*cautery puncture*."

Although we cannot agree with many of the opinions—chiefly those on pathological topics—expressed in this work, and although we think the style rather intolerant and dogmatic in some parts, yet we must say that the book, as a whole, is well written, and pleasant to read, and evidences a very considerable degree of care, attention, and labour on the part of the author.

The Other Side of the Opium Question. By W. J. MOORE, L.R.C.P.Edin., M.R.C.S.Eng., L.S.A.Lond. Deputy-Surgeon-General H.M. Forces, Presidency Division, Bombay, Honorary Surgeon to the Viceroy of India. London: J. & A. Churchill. 1882.

THOSE who may be interested in the opium question, as it affects China, will find a great deal of interesting and useful information in this little book of Deputy Surgeon-General Moore. The object of the book is to show that a great deal too much has been made of the evil effects following the use of opium in China. It is essentially one-sided in the way it treats the subject, but this is what one would expect in a work which is written to show that the popular opinion of the evil is exaggerated. The work consists of a series of papers, which first of all appeared in the *Indian Medical Gazette*, and it is therefore somewhat rambling in style and contains a good many repetitions in the different articles. The first article contains the statistics, derived from the author's experience as Superintendent-General of Dispensaries and Vaccination in Rajpootana, of the numbers of people using opium. In the second is given an account of the character of the Chinese, and the writer tries to show that the object of the Chinese Government in trying to prevent the importation of opium was not so much to elevate the moral condition of the people as to prevent "the exportation of sycee silver and dollars." The third deals with the effects of opium upon the system, and terminates with the following among other statements:—"In their protests against the use of opium the Chinese Government have not been honest: the real reason they did not desire the trade being, *first* the fear of the great exportation of silver; and *secondly*, a stinging sense of humiliation from being obliged, as the result of British victories, to admit Indian opium to the Treaty ports on a fixed tariff (although this does not prevent their placing any tax on such opium carried into the interior of China). Opium taken in excess is undoubtedly injurious. But opium taken in excess is not more injurious than alcohol taken in excess—Opium taken in moderation is not injurious—Opium is especially suited to the Chinese constitution, habits, and to the small pecuniary means of the masses." The fourth is an elaborate criticism of Christlieb's book entitled, *The Indo-British Opium Trade, and its Effects*; and the last takes up the question as to whether the habit of opium smoking can be broken, and institutes a comparison

(certainly in favour of the opium) between the excessive use of opium on the one hand and alcohol on the other. A good deal is made of the suggestion that those people, who are so loud in their denunciations of the evils of the opium trade, should first remove the beam from their own eyes in the matter of intemperance before extending their philanthropic efforts so far as China. This is perhaps a somewhat time-serving method of argument, and we cannot help thinking that the greatest ultimate good—in the matter both of alcoholic and opium intemperance—will emanate from those who exaggerate, rather than diminish, the evil effects.

The author has evidently expended a great deal of time and trouble on the subject he has taken up, and the book will well repay a perusal. We can heartily recommend it, not only to medical men, but also to the public at large, who are sometimes apt to be misled by popular opinion on the subject.

The Influence of Vivisection on Human Surgery. By SAMPSON GAMGEE, F.R.S.E., Consulting Surgeon to the Queen's Hospital, Birmingham. London: J. & A. Churchill. 1882.

THIS, an address delivered in the Birmingham Medical Institute, is published in the form of a small pamphlet, and is another valuable addition to the many convincing proofs of the inestimable value of vivisection to suffering humanity. The author adopts a plan of reasoning which cannot fail to attract the thoughtful consideration of those whom he is opposing. He seeks to convince not by open rebuke, but by a sincere respect for good intentioned though misguided zeal and a statement of authentic facts. Taking the middle of last century as a starting point, Mr. Gamgee, by contrasting the surgery of that date with that of the present day, shows how many of our great surgical remedies now employed have been achieved by experiment and previous practice upon animals. The whole address cannot but fail to suggest the inference that if so much benefit has already accrued to suffering humanity from experiments on animals, how many yet may be suffering from the need of remedies which, but for those misdirected enthusiasts, might have been discovered. Well, we think, might Mr. Gamgee have asked in conclusion, Are not anti-vivisectionists causing more pain and suffering to their fellow-creatures than they seek to prevent in dumb animals? We would hope this little pamphlet might find its way into a field where but accuracy of knowledge is needed to stem the current of misguided zeal.

REPORTS OF HOSPITAL AND PRIVATE PRACTICE.

WESTERN INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. W. G. DUN.

FROM DR. H. C. CAMERON'S WARDS.

TWO CASES OF OVARIOTOMY.

REPORTED BY MR. J. W. GRANGE, M.B., HOUSE SURGEON.

CASE I.—Mrs. R., æt. 30, was admitted on 13th Dec., 1881. Four years ago patient first noticed that her abdomen was slightly swollen. The swelling is said to have begun in the middle line, and gradually increased in all directions until the abdomen was greatly distended. The abdomen has been tapped nine times altogether. The first tapping was in March 1880, and the last was five weeks ago. Previous to the last tapping, the tumour was considerably larger than it is at present. Patient has suffered considerably from pain in the upper part of the abdomen; and this symptom has always been relieved by the tapping. Patient's health, for several years preceding this illness, has not been satisfactory. She has been subject to severe attacks of vomiting; but she has not been so troubled since the swelling in the abdomen began. Latterly, she has improved very much in health.

She has been married for two years and a half, but has had no children. Menstruation has been regular and has never been interrupted. Lately it has been more frequent than natural.

On admission, the abdomen was found to be uniformly distended. The surface was smooth and traversed by enlarged veins. The measurement in circumference, round the most prominent part, was fifty-two inches; at the level of the umbilicus it was 49½ inches. The distance from the umbilicus to the left anterior superior spine of the ilium was 24½ inches, and to the right 24½ inches. The distance from the umbilicus to the sternum was 16 inches, and from the umbilicus to the symphysis pubis 11 inches. Fluctuation was present in a very marked degree. Not more than four or five ounces of urine per day were passed; but it was free from albumen. When the tumour was fully distended there was cedema of the

lower limbs, the buttocks, loins, and skin covering the lower part of the abdomen; but this was not marked at the date of admission, as it was only five weeks since the last tapping, and the tumour had not nearly re-filled.

17th December.—Ovariectomy performed under the influence of ether. The whole of the front of the cyst was closely adherent to the parietal peritoneum; but after this had been slowly separated by the fingers, the posterior relations of the cyst were found to be free. The pedicle was ligatured with catgut, as were also a great number of bleeding points in the surface of peritoneum from which the adherent cyst had been separated. As oozing still continued from the large surface, an india-rubber drainage-tube was introduced at the lower end of the incision, which was closely stitched with numerous carbolised silk sutures. The operation was conducted with strict antiseptic precautions. After the operation there was considerable shock, the pulse being almost imperceptible. It gradually, however, improved in strength, and at 2 P.M. numbered 96 per minute, being regular and fairly strong. Temperature at same time was 98°·6 F. Patient slept at intervals during the day. She got no stimulant, but soda water and ice and a very small quantity of milk, which, making her sick, was discontinued. As she complained of pain a morphia suppository was administered, and in the afternoon a sixth of a grain of morphia was injected subcutaneously. The bladder was emptied at regular intervals. There was a slight oozing of blood on the lower edge of the dressing.

After removal, the tumour was found to consist of one very large cyst, with an enormous number of smaller cysts of very various sizes growing from its walls.

18th December.—Temperature this morning was 100° F. Pulse 108. Very little pain complained of. Dressing changed. Previous to operation, patient was passing only 7 oz. of urine in the twenty-four hours. During the twenty-four hours succeeding the operation she passed 15 oz. To-night pulse is 112. Temperature 99°·6. During the day she has slept now and again, and last night slept very well.

19th December.—Patient passed a very comfortable night. In morning, pulse was 112, temperature 98°·6. Dressings changed, and drainage-tube discontinued. She is getting milk and potash water, and occasionally a little beef tea.

20th December.—Patient continues very well. Temperature and pulse much as before. During the day had a slight attack of epistaxis, which, however, soon stopped.

21st December.—Continues to improve. Pulse about 100. No return of the bleeding from the nose.

23rd December.—Bowels not having moved since operation, a teaspoonful of compound liquorice powder was ordered.

25th December.—Medicine given two days ago acted satisfactorily. Wound dressed to-day, and stitches removed. Pulse still about 100.

3rd January, 1882.—Since last report patient has made uninterrupted progress. She expresses herself as feeling very well and takes her food with relish. A small abscess in the skin, and corresponding with what was the situation of the lowest stitch, burst last night. Before doing so it occasioned her some uneasiness.

4th January.—Patient allowed to get up to-day.

10th January.—Wound in abdominal wall healed, except at two spots where small surfaces remain uncicatrised. Patient left the hospital to-day, her health being very good.

Remarks by Dr. Cameron.—I first saw this patient in consultation with her usual medical attendant in March 1880, when I performed *paracentesis abdominis*. She was entirely opposed to having any radical operation attempted. She continued in this state of mind until her admission to hospital, and, as has been stated, was, during that period, tapped by us nine times. The intervals between these operations became shorter on each successive occasion. When fully distended the tumour was of enormous size, leading to cedema of the lower limbs, buttocks, and lower parts of the abdominal walls, while the urine became extremely scanty, and the breathing rather oppressed. It was the urgency of these symptoms which led us to perform frequent tapping in the absence of her consent to submit to radical operation. The close adhesion which was found to exist between the entire anterior surface of the tumour and the parietal peritoneum is an interesting corroboration of a view now generally held by ovariologists, that repeated tapping previous to operation is an undesirable procedure, since it is prone to lead to the formation of extensive adhesions.

CASE II.—A. M., aged 19, was admitted 1st March last. The following is a short history of the case:—

In February of last year slight swelling of the abdomen was first observed. The swelling gradually increased, and was most marked on the left side. Up till this date she had never menstruated. In March the abdomen was tapped by Dr. Cameron, and in April she menstruated, for the first time

without pain or inconvenience, and she has done so regularly ever since. No refilling of the cyst was noticed until August, when the swelling gradually returned. This condition was unaccompanied by pain, but latterly she has experienced a feeling of weight and discomfort in the epigastrium, and her strength has been failing.

The family history is good, and patient herself, previous to this illness, has enjoyed very good health.

4th March, 1882.—When examined to-day the abdomen measured 32 inches in circumference. There was uniform dulness on percussion, in front, and to the left side, the right flank being tympanitic. There has been no cedema of the legs or abdominal walls.

6th March.—Ovariectomy performed with antiseptic precautions. There were no adhesions, nor was the operation complicated in any way. The pedicle was ligatured with carbolic chromic catgut, and the edges of the abdominal incision brought together with silk and catgut stitches. No drainage-tube was inserted.

There was considerable shock after the operation, accompanied by retching, but from this patient made a good recovery. Shortly after the operation the temperature was 97°·6 F., rising in the evening to 100°·4 F. Pain complained of, but relieved by morphia suppository.

7th March.—Slight pain complained of during the day. Temperature in the morning 99°·8 F.; at night, 101° F. Nothing else of importance to note. Her pulse has been fairly strong and regular since the operation.

8th March.—Early this morning patient took severe diarrhoea, which has continued during the day, there being ten motions within twenty-four hours. There was also a feeling of sickness, but no vomiting of any consequence. The diarrhoea was checked by morphia suppositories.

9th March.—Still some diarrhoea during the day. Wound dressed under the spray. No tympanites or irritation in neighbourhood of wound. In the evening vomiting came on, and was very persistent. No diarrhoea.

12th March.—During the last two days patient has greatly improved. Dressings changed, and some stitches removed.

15th March.—All the stitches taken out. Incision firmly united.

21st March.—Small abscess opened which had formed in the track of one of the stitches at the lower end of the incision. Otherwise patient is quite well.

25th March.—Patient well. Allowed to get up.

Remarks by Dr. Cameron.—When I tapped this girl's tumour a year ago, I did so for diagnostic purposes, and with the full expectation that it would at once refill. As this did not, however, occur, and as it was followed by the establishment of menstruation and a great improvement in the general health, this led me to hope that a radical cure had followed, as it is occasionally known to do (in parovarian cysts), the mere emptying of the cyst. In August, however, the swelling once more was observed, and from that time rapidly increased.

GLASGOW ROYAL INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. WM. MUIR.

FROM DR. DUNLOP'S WARDS.

INCONTINENCE OF URINE — CIRCUMCISION — RECOVERY.—Michael Cairns, æt. 12, schoolboy, was admitted into the Royal Infirmary, under the charge of Dr. Dunlop (13th Dec., 1881) suffering from incontinence. It commenced two years ago by pain on micturating, and shortly afterwards the urine came away of its own accord. No history of injury nor any other disease. Urine quite normal. Patient was examined for stone repeatedly, and belladonna, iron, and Easton's syrup were tried in turn, but all of no avail. It was noted, however, that the foreskin was unusually long and a little inflamed, so circumcision was performed 8th Feb. The most satisfactory result ensued, and patient was discharged quite cured 21st Feb., 1882.

COMPLETE PARALYSIS OF MOTOR TRACT FROM EFFUSION PRESSING ON SPINAL CORD.—Alexander Stuart, æt. 23, labourer, was admitted into the Royal Infirmary, under the care of Dr. Dunlop, 23rd November, 1881.

History of Case.—On 20th Nov. he fell on the pavement, striking the back of his neck against the curbstone. He was very drunk at the time and unable to move afterwards; but whether the loss of power resulted from paralysis supervening immediately after the accident, or was due to drink, cannot be ascertained. He was taken home, and lay helpless in bed till the 23rd, when he was brought to the Infirmary.

Condition when admitted.—Patient is quite powerless,

all the muscles of the trunk and extremities being completely paralysed. Respiration diaphragmatic. Retention of urine and paralysis of sphincter ani. Contraction of the left pupil, due no doubt to the cilio-spinal centre being affected. He is quite intelligent, and articulates distinctly. No displacement of the vertebræ can be detected; neither is there any bruising of the soft tissues. He is slightly livid from deficient aëration. Pulse and temperature normal. He was placed on a water bed and treated on general principles.

Past history.—Had always been a strong, healthy man, with never a day's illness in bed.

Family history.—Good. No history of paralytic affections.

Progress of case.—*25th Nov.*—Patient is able to move his arm and right leg very slightly. Retention still continues. The intercostal muscles have recovered their power; lividity quite gone. Respiration, pulse, and temperature normal.

27th Nov.—Incontinence set in.

29th Nov.—Patient has now full command over bladder and rectum.

2nd Dec.—He is gradually regaining muscular power, and this morning for the first time he drew up the left leg very slightly. Contraction of left pupil still continues.

9th Jan.—Pupils normal. Has full control over his limbs, but does not feel strong. Can walk a little by aid of crutches, but soon grows exhausted.

21st Feb.—Dismissed quite well, with exception of left side, which is still rather weak.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1881-82.

MEETING V.—3RD FEBRUARY, 1882.

PROFESSOR GEO. BUCHANAN, *President, in the Chair.*

DR. A. PATTERSON read NOTES OF A CASE OF STONE IN THE BLADDER, in which both lateral and supra-pubic lithotomy were performed, and showed the patient. This paper appears at p. 241.

The President said this was a very interesting case. He was present at the operation, and could corroborate the difficulties experienced in getting it out of the bladder. A stone of this kind produced a great amount of irritation, and the patient's agony was very great. The difficulty, however, was not only in the size of the stone, but also in the fact that the bladder closes round it, and that no water accumulates in the bladder from the frequent micturition. The bladder becomes thickened, and gets sunk into the interstices of the stone, and the difficulty is to disentangle the stone from the bladder wall. The practical point in the case was this—viz., that even if we knew the stone was of this kind and size, and could not be removed through the perinæum, a preliminary opening in the perinæum should be made. He would always do it. That it was necessary was proved by the present case when a time came that the perinæal wound was not a sufficient drain, and immediately the wound was freely opened and drainage established, the grave symptoms passed off.

Dr. Grahame, of Paisley, corroborated *Dr. Buchanan's* remarks. He had a somewhat similar case in his own practice, which had a clinical history of nine years. There was very considerable difficulty in removing the stone from the presence of nodules. He thought the curved scoop would have helped it.

Dr. M'Ewen said the question as to the wound in the perinæum was more a matter of theory, and he would hesitate before making such a wound if he could remove the urine by another method. The supra-pubic operation is often done in Turkey, where they do very well even without the use of an instrument. If you could introduce an instrument into the bladder so as to drain the urine, then the aperture in the abdomen and bladder wall would heal quickly. He would do this in the way *Chiene* had advised, by an india-rubber tube passing from the catheter to a vessel under the bed. The case was interesting and satisfactory.

Dr. Beatson had seen exactly the same operation done by *Dr. Watson* in Edinburgh, which was also successful. In this case the point of drainage was one of the most important. *Civiale* advised such a procedure to drain away the urine. Experience shows that no thorough evacuation is obtained by an instrument; and those cases, where a free incision had been made, were the most successful.

Dr. Patterson knew of *Dr. Watson's* case. He himself had done another supra-pubic operation. This case was very different from the supra-pubic cases of the Continent, where every stone

was so removed, and the patient sometimes kept on his face, sometimes not. But in this country the cases were broken down, and unsuitable for any operation, so we can scarcely compare them. In his other case there was no perinæal wound, and the patient died on the 27th day. If he had made such a wound, he might possibly have survived. Dr. A. Buchanan did this operation thirty years ago.

DR. JAMES WHITSON read a paper "ON A CASE OF PARALYSIS OF THE MUSCULO-SPIRAL NERVE, CAUSED BY THE PRESSURE OF A FRAGMENT OF BONE," and showed the patient. After referring in general terms to the importance of the subject, he pointed out that the paralysis might be caused in one of two ways—(1) a great excess of callus may press on the nerve; (2) a projecting fragment may push it aside, and so stretch it as to destroy its functions. The latter was the condition in his case. The patient had his arm broken in July 1881, and although bony union was obtained, the thumb and wrist remained quite powerless, the fingers being cold and benumbed. A spiculum of bone, projecting in an oblique direction was discovered, which evidently was pressing on the musculo-spiral. It was situated about three inches above the elbow. It was determined to remove the fragment. On the 23rd November a dissection was made to expose the fragment. The nerve was found much pressed on, and somewhat thinned. The fragment was removed by the chisel. The wound was dressed in the usual way, and a splint applied. Within five weeks of the operation the grasp of the hand had considerably strengthened, and the mobility of the fingers had greatly increased. The temperature of the hand was normal, and the sensation much improved.

Dr. McEwen said the case was interesting from its rarity and excellent result. He had had a case somewhat similar, but it was the median that was involved. There had been fracture 13 months previously, and there was present drooping of the wrist, and extreme flexion of the fingers from contraction of the muscles. He cut down on a spicule about 2 inches above the elbow, and found the median transfixed by it. He removed the bone, but did not feel sure whether the nerve fibrils would unite. After two months he opened the wound and found the fibres drawn within the sheath. He brought them together. After this there was some improvement in the sensation, but little in the movement. He had

had another case of ligature of the ulnar nerve, where there was decided improvement in movement and sensation.

Dr. Allen said that *Dr. Whitson* spoke of the nerve being thinned, and he thought that some of the fibrils must have been destroyed; and in proof of this, he pointed out that there was a certain amount of paralysis still remaining.

Dr. James A. Adams said the same thing had struck him with regard to the destruction of some of the fibres of the nerve.

DR. JAMES WHITSON read "ON A CASE OF HYDROCELE OF THE NECK," and showed photographs. He first pointed out that these cases are interesting to the surgeon from their comparative rarity, and from their position, demanding skill and care in treatment. The case he now wished to bring under notice was one similar to that related in *Bryant's Surgery*, and of very large size. The patient was a girl, 7 years of age, and the hydrocele was situated on the right side of the neck. It had first appeared when she was five months old, since which it had gone on increasing in size, but had never caused any inconvenience to the patient. The head was carried slightly to the left side. There was an oblique depression in the tumour corresponding to the sterno-mastoid. On the 14th August, 1881, it was evacuated by means of the aspirator, and continuous pressure afterwards applied. By the middle of November the cyst was as large as ever, and on the 18th, with antiseptic precautions, an incision was made into it. When it was thoroughly evacuated, tincture of iodine (E. P.) was applied to its interior by means of a brush. Decalcified drains were then introduced, and the wound dressed. Five weeks after operation the wound was healed, and the hydrocele has been completely cured.

Dr. Patterson said these cases were well known, and he thought *Dr. Whitson's* plan of treatment was an improvement on the ordinary method. Stuffing the sac with lint had been tried, but it set up a great deal of inflammation, and caused puckering of the skin. *Seton's* had also been used. He had had a case recently where he made an antiseptic incision into the cyst, rinsed it out with chloride of zinc, and then stitched up the wound. So far, it had done well.

Dr. Lothian would have been inclined to wash out the sac with a solution of eucalyptus.

Dr. M'Ewen said that in such a case as this it was important to leave as little mark as possible.

A CASE OF TUBERCLE OF THE IRIS AND CILIARY BODY.

DR. WOLFE read a paper on a case of TUBERCLE OF THE IRIS AND CILIARY BODY.

The following is an abstract of the paper, kindly furnished by the author:—I wish to direct the attention of the Society to a case of tubercle of the iris and ciliary body. The case is interesting, not only to ophthalmologists on account of its rare occurrence—this being the only one on record in this country—but also in this respect, that it may throw some light on a much debated question in pathology and clinical medicine. The definition of tubercle now generally adopted is that of Virchow, who regards it as a neoplasm. The life of the neoplasm is of short duration, for very soon its elements begin to degenerate, the degeneration always commencing in the middle of the nodules, and in most cases giving rise to caseous consistence. Besides the local malignity this neoplasm possesses a pronounced tendency to diffuse itself over the whole organism, and this brings it into the category of malignant growths.—(*Die Krankhaften Geschwülste*, 1865.)

Langhans then demonstrated that the nodules invariably possess giant cells of a peculiar organic formation; these giant cells are of a finely granular structure, to which they owe their peculiar appearance. They developed by a regular gradation from simple cells, and are thus shown to be organic formations. This precise histological determination of tubercle enabled Köster to point out its existence in the granulations of the fungous joints, and Schüppel discovered it in scrofulous lymphatic glands, and Friedländer has shown that it is also found in scrofulous abscesses and in caries.

Villemin made the discovery that tubercles can be inoculated upon animals, especially upon rabbits (*Etude sur la Tuberculose*, 1868.) This discovery has been confirmed by the experiments of Cohnheim, who inoculated tuberculous matter into the anterior chamber of rabbits. The inoculated matter was gradually absorbed; but in about four weeks after inoculation grey nodules made their appearance upon the iris and multiplied until thirty or forty could be counted. The iris became tumified, and then purulent infiltration set in. Baumgarten has more recently carried this experiment still further. He injected blood taken from a freshly killed tubercular-inoculated animal into the aqueous chamber of rabbits; and he invariably found that in three or four weeks there was an eruption of tubercle, first in the lower

segment of the iris where the blood had lodged. Rokitansky, from personal observation of 14,000 cases, has given us a list of the tissues which are subject to tubercular eruptions—viz., the lungs, intestinal canal, lymphatic glands, larynx, brain, spleen, liver, &c. The ocular tissues find no place in the list, for the eye was considered to enjoy immunity from tubercular affections. Although Iager had called attention to its occurrence in the form of miliary tubercle which he found in the dead body, and Manz, von Gräfe, and Leber, had also discovered it during life in the interior of the eye, this excited little attention. For when the whole organism is impregnated with the disease, its existence in the eye is regarded as of secondary importance. The first case of miliary tubercle of the iris on record is that published by Gradenigo in 1869 (*Annales d'Oculistique*, 1870; and *Arch für Ophth.*) Since then other six cases have been recorded in France and Germany.

A most remarkable case was brought up for discussion by M. Auger at a meeting of the Société de Chirurgie of Paris, 9th July, 1879. It had been observed by M. Parinand. A child of 12 years of age, of phthisical parents, had already suffered from discharge from the ear. Then the cornea was affected, and a small tubercle became visible upon the iris, which involved the whole eye. This case is particularly interesting, as the discussion which took place in that learned body with regard to its pathology and treatment shows how little the subject of local tubercle is still understood. The case which I am about to bring before your notice is that of Joseph L., eight years of age, with fair hair and blue irides, and of healthy complexion, had always enjoyed good health, and had no cough or glandular affection. He is the tenth of a family of eleven, of whom five are living. Five of them died at the ages of 5, 4, 3, 1 year, 10 weeks, and another was still-born. The causes of death were teething, bronchitis, and hydrocephalus.

The patient received a stroke on the left eye in March 1881, when the eye became swollen. The swelling gradually subsided, and by the end of April a white swelling became visible in the anterior chamber at the upper margin of the iris. He was brought to the Ophthalmic Institution in the beginning of May, when the eye appeared quite healthy; but a small tumour, the size of a half pea, could be seen situated upon the upper segment of the iris. It took its apparent origin from the junction of the cornea with the sclerotic, and was attached to the anterior surface of the iris.

The tumour was of a yellowish-white tinge, and divided into two lobules, with very fine vessels permeating its surface. The pupil was dilatable, with the exception of the upper border. There was no change of colour of the iris, vision was normal and tension normal. In short, with the exception of the ciliary injection, which was limited to the upper segment, there was no sign of disease in the ocular tissues.

The patient was kept under observation for a whole month, and we found the tumour gradually, though very slowly enlarging. Our diagnosis was tubercle in the iris, which probably extended to the ciliary body. We recommended an operation to attempt the removal of the iris along with tubercle; but, at the same time, we warned the mother that the disease was probably more deeply seated, and that the operation would not effect a cure. I made an incision under the conjunctiva, at the extreme corneal periphery, and succeeded only in removing part of the tumour; the rest of it was found to lie deeper, whilst a very small bit, the size of a pin head, became detached and dropped down, and lodged in the lower part of the aqueous chamber.

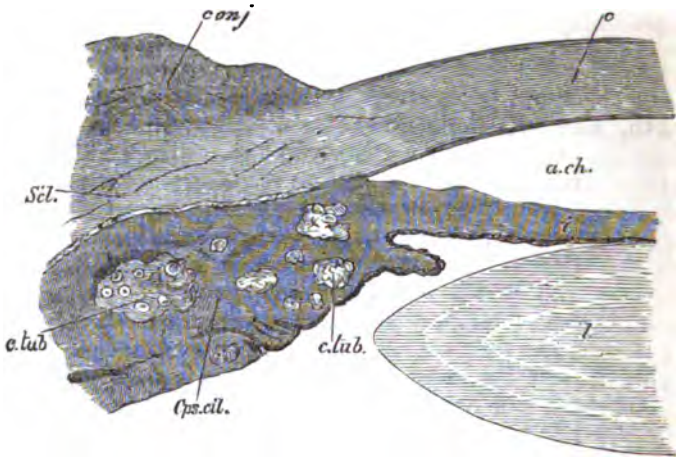
The wound healed tolerably well, but the part became tumified, and after the lapse of a fortnight there were seen small lines or greyish threads proceeding from the detached part and shooting upwards towards the other portion of the iris, which also became studded over with little nodules, until, by and bye, the whole iris was swollen and the pupil completely closed. I then removed the eyeball and sent it to Professor Hirschberg, who examined it along with Dr. F. Krause, and reports as follows:—

1. Cornea and sclerotic, normal.
2. Conjunctiva, especially the upper part, infiltrated with round cells.
3. Iris: anterior surface covered with an exudation of round cells, and thickened by the infiltration of round cells. Its pigment-epithelium is glued to the lens-capsule by means of a thin exudation.
4. Ciliary body is very much thickened, as well as its adjacent iris segment on the same side. The thickening is composed essentially of round cells. When this mass is treated with hæmatoxylin it is intensely coloured, while other round bodies lodged in the interior remain pale. These latter are true tubercles, and show in their centre giant cells with many nuclei. No caseous matter is anywhere to be seen. The thickening passes into the

choroid only to a limited extent, and the deep structures of the eye are normal.

Fig. I represents the condition of the different parts.

FIG. I.



Conj., Conjunctiva.

C.tub., Conglomerated tubercles.

C., Cornea.

A.ch., Anterior chamber.

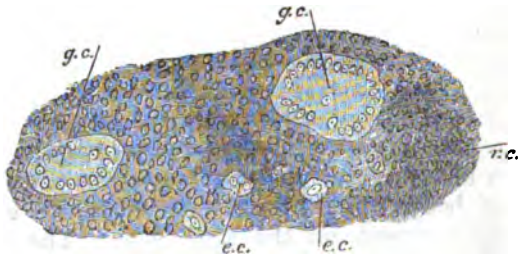
Cpa.cil., Corpus ciliaris.

L., Lens.

Scl., Sclerotic.

Fig. II, from the ciliary body, under a magnifying power of 200.

FIG. II.



G.C., Giant cells.

E.C., Epithelial cells.

R.C. Round cells.

We therefore took this to be a case of true tubercle of the iris and ciliary body, limited to these structures without manifestation of disease in any parts of the organism, although

it is true that it was brought on by an injury in a constitution predisposed to that affection, as shown in the family history. But the most remarkable feature of the case is that, on 29th November, the patient returned with ulceration of both legs. Large sores with running ichorous and caseous discharge were situated at the front part of the legs. There is an induration at the margin of both tibiæ. This had broken out about the beginning of September. We have thus established that tubercle in its highest development consists of simple nodules, containing giant cells, without any caseous matter; and that the eruption may be confined to one spot, and that may be in any of the ocular tissues; and, further, that it is inoculable, although in this case the inoculation took place only in a different segment of the iris, and not in a different animal.

Dr. Coats said this case was of great interest and importance. He had no hesitation in agreeing with Krause's description of the appearances presented—viz., that it was a case of tuberculosis of the iris and ciliary body, with the usual inflammatory products. It was interesting also, because of the inoculation which had taken place, and proved, he thought, that tubercle was due to a specific virus.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.
SESSION 1881-82.

MEETING IV.—10TH JANUARY, 1882.

DR. HECTOR C. CAMERON, *President*, IN THE CHAIR.

DR. THOMAS REID showed a tumour of the eyeball, originating in the choroid. There had been separation of the retina six years ago, followed by cataract. Swelling had appeared in the lower part of the eyeball about a year ago.

DR. CAMERON showed a patient on whom SUB-PERIOSTEAL RESECTION OF THE OS CALCIS was practised. The patient was now 18 years of age. Six years ago he was under Dr. Cameron's care for caries of the os calcis. He cut down upon it, and removed the diseased portion. The disease recurred soon afterwards, when the whole bone was removed. He kept well for two or three years, when an abscess formed and burst.

This was shown to Lister at Edinburgh, who removed dead bone from the astragalus. This also healed well. He has now a good foot, and is able to walk eight or nine miles a day. One can see also that there has been a distinct restoration of the bone.

DR CAMERON showed a sketch of a CONGENITAL TUMOUR OF THE FOREHEAD. The tumour was of large size at birth, and did not grow very rapidly afterwards. It was attached to the forehead, at the root of the nose, by a peduncle, and moved about with the movements of the head. It was rosy pink in colour, having at parts a semi-translucent appearance. It could not be reduced in size by pressure, and never was felt to pulsate. It appeared to become a little fuller and tense when the child cried. There was no tenderness or complaint when it was handled. The ala of the left nostril was cleft, and it could be felt that, although the soft parts were entire, there was a cleft in the bony walls of the left nostril right up to the situation of the pedicle of the tumour. All this naturally suggested the possibility of a congenital defect at the root of the nose, and of an intra-cranial origin of the tumour. In fact, the question arose, was it, or was it not, a frontal encephalocele? When the infant was about two months old, the tumour was excised. No communication with the interior of the cranium was discovered. The tumour was examined microscopically by Dr. Newman. The cleft of the ala nasi was repaired by plastic operation.

DR. NEWMAN showed MICROSCOPIC SECTIONS OF DR. CAMERON'S TUMOUR. The tumour is of a pale colour, firm consistence, and about the size and shape of a pigeon's egg. It is covered with soft smooth skin, in which there is a number of fine short hairs.

On microscopic examination, the greater portion of the tumour is seen to be made up of a tissue composed of long narrow spindle-shaped cells, and of fibrous tissue. The rest of the tumour is composed of small saccules and tubes, filled with spheroidal and columnar epithelium. Both the sebaceous and sudoriparous glands have undergone excessive development; and the epithelium lining the hair follicles is considerably increased, particularly at the roots of the hairs. At some points the epithelial elements of the skin extend slightly into the subjacent connective tissue. Between the contorted tubules, forming the glomerulus of the sweat gland, the connective tissue is increased in amount; but the gland cells do not

appear to be altered. The sebaceous glands are considerably enlarged; but only in a few instances does the development of epithelium extend beyond the sheath of the gland, which, however, is greatly distended with spheroidal epithelium. There is also a development of connective tissue around the blood-vessels, which, it may be observed, are few in number.

DR. RENTON showed a patient on whom a plastic operation was performed to restore the lower lip. E. B., æt. 21, was burnt over her face and neck with paraffin when she was twelve years old. The burn resulted in a large cicatrix which drew down the lower lip towards the sternum, as is shown in photograph.

Six weeks ago Teale's operation for forming a new lower lip was performed, the result being that the patient has now a good lip, can close her mouth, can eat with comfort, and saliva no longer trickles constantly over her chin.

DR. PINKERTON showed specimens from a case of LARYNGEAL DISEASE. The patient, a boy, æt. 6 years, was admitted about mid-day with so-called "croup." There was great embarrassment of respiration—stridor—evidently due to some laryngeal obstruction. Breathing was accelerated; inspiration accompanied with loud noise. Face and lips were livid. Pulse rapid, and very feeble. Glands around angle of jaw very much swollen, but not painful.

It was with great difficulty one could get a look at the throat, and only slight congestion of fauces could be seen, back of throat not being visible. Seemed somewhat relieved at first by poultices round throat, and stimulants, &c., internally. Soon, however, dyspnoea increased, and lividity became more marked, till he died in about six hours after admission. The duration of the illness was four days altogether.

The parents' only other child had died from an "exactly similar" disease a month ago; the medical attendant said it was "scarlet fever," though no rash was seen in either of the cases.

DR. W. L. REID showed the newest form of his midwifery forceps; and the following is a brief description of the instrument and its advantages:—This is a form of long forceps intended for use in all positions of the head and in any part of the pelvic cavity. It is short (13 inches), light (15½ oz.), and easily applied. It grasps the head at the brim in the safest, *i. e.*, the bi-parietal diameter. It permits of traction exactly in

the axis of the inlet, has no tendency to slip, and may be so used as to be guided by the head. It also permits of rotation from occipito-posterior to occipito-anterior positions, and may then be used as a straight forceps. When using it at the brim there is less risk of damaging the perineum.

DR. JOSEPH COATS and DR. J. LINDSAY STEVEN exhibited the following pathological specimens from the museum of the Western Infirmary:—(No. 1.) *Tumour of Medulla Oblongata.* (Dr. McCall Anderson.) The fourth ventricle is exposed by an incision carried through the cerebellum in the middle line, and a bulky tumour is seen in its floor. Its greatest length and breadth are about one inch. Its greatest bulk is on the right side, and its surface is nodulated. It presents the microscopical structure of a glioma.

The symptoms were of three years' duration, and began with internal squint. Shortly after this he suffered from drowsiness, and about a year before death he experienced difficulty in walking, from a tendency to fall backwards or forwards. Latterly he suffered from great salivation, headache with noise between the temples, and vomiting. There was distinct evidence of implication of sixth, third, glossopharyngeal, and left spinal accessory nerves. (For details see *Edin. Med. Journ.*, Sept. 1881.)

(No. 2.) *Twisting of Sigmoid Flexure.* (Dr. Gairdner.) The specimen shows a very definite twist of the sigmoid flexure, the flexure being turned half round twice over in the usual way. The neck shows some thickening of the peritoneum, indicating a considerable duration, but no great distention. No special clinical history, the twist only being discovered *post-mortem*.

(No. 3.) *Papilloma of the Bladder.* (Dr. George Buchanan.) The growth, which is about the size of a hazel nut, springs from the mucous membrane of the bladder by means of a narrow neck, which is judged to be about the thickness of an ordinary lead pencil. The body of the tumour consists of a great number of fine branching processes, giving it the appearance of a sea anemone with its tentacles spread out, and it overhangs its base considerably.

(No. 4.) *Scapula with Sarcomatous Tumour: Excision.* (Dr. Lyon.) The prominent markings of the bone are preserved. The tumour is seen to occupy the infra-spinous, the supra-spinous, and sub-scapular regions. Although tumour tissue is present on both sides of the scapula, the hard blade of the bone is quite preserved. Microscopically, it consists of large round

cells, with here and there strands of spindle cells and intersections of connective tissue. Bony spicula are scattered through the tumour tissue.

(No. 5.) *Superior Maxilla with Tumour of base of Skull: Excision.* (Dr. George Buchanan.) The tumour is irregularly lobulated, and, although closely applied to the jaw, was at no point very firmly adherent to it, its point of attachment being the base of the skull. Microscopically, it consists mainly of connective tissue, with, in some parts, an approach to spindle-celled tissue. Symptoms of three years' duration, with progressive painless enlargement till, at date of removal, right eye could not be shut, and right nostril was completely obstructed.

DR. E. D. MACKELLAR showed a number of pathological specimens, of which the following is a note:—(1.) The liver, from a case of trichina spiralis reported at the December meeting, in which there was a large false abscess, bounded by the right lobe of the liver, the intestines, and the abdominal walls. The organ was partly compressed, partly eroded, and covered with shreddy lymph infiltrated with pus. (2.) Uterus and appendages of middle aged married woman, who died of acute bronchitis, on the posterior surface of the fundus was a small yellow tumour lying below the peritoneum, and in front a larger pendulous tumour. The left fallopian tube was dilated, filled with firm exudation and reddish turbid fluid, and closed by adhesion to the ovary, which showed the remains of extravasation close to its surface. (3.) Uterus and appendages of a married woman, æt. 46, showing adhesions between uterus and rectum, with elongation, twisting, and dilatation of the left fallopian tube. (4.) and (5.) From women who had been recently delivered, and illustrate suppurative inflammation of the uterus and its appendages.

M E D I C A L I T E M S .

UNDER THE DIRECTION OF
ALEX. NAPIER, M.D.

Caffeine and its Salts for Hypodermic Injection.—On 28th Dec., 1881, M. Tanret read an important paper on the above subject before the Soc. de Thérapeutique de Paris. He showed that only very small doses of simple caffeine could

be injected hypodermically; it dissolves only in 93 times its weight of water, and that gives not more than 1 ctgr. to the ordinary syringe. As for its so-called salts, most of them have no existence, and the others can not be employed, as when dissolved they at once break up into acid and caffeine, the latter being precipitated.

The alkaloidal properties of caffeine are extremely feeble; it is neutral to litmus paper, and is incapable of neutralising the smallest quantity of acid. Concentrated acetic acid dissolves caffeine freely, but no acetate is formed. Neither does valerianic acid combine with caffeine; the latter retains mechanically traces of the acid, just enough to yield the characteristic odour, which disappears on washing or on exposure to air. The same may be said of lactic and citric acids; the 'product named "citrate" is simply a mixture of citric acid and caffeine. The organic acids as a whole do not form definite salts with caffeine; they augment, it is true, its solubility in water, but as the acid is not at all modified by the caffeine, such solutions are not suitable for hypodermic injection, as free acids would be introduced.

With the mineral acids (sulphuric, hydrochloric, hydrobromic) caffeine forms definite, but very unstable salts; water decomposes them, and exposure to the air has the same result in a longer or shorter time, according to temperature of the atmosphere. Salts of caffeine derived from mineral acids have therefore no advantage over pure caffeine itself.

M. Tanret then thought of obtaining a salt of caffeine by means of chlorogenic or cafetannic acid, with which caffeine is combined in coffee, as Payen has shown. But Payen's chlorogenate of potash and caffeine is difficult to make, and is very readily decomposed by the air. Similar acids, however (cinnamic and benzoic), have given better results; the author has formed double salts with them—analogous to Payen's salt. In presence of benzoate, cinnamate, or salicylate of soda, caffeine dissolves in a very small proportion of water, and forms double salts, which are very soluble and very rich in caffeine. Combination takes place in the proportions represented by the chemical equivalents of these different bodies; this union is feeble enough, however, as these salts lose all their caffeine when treated with chloroform.

The cinnamate of soda and caffeine contains 58.9 per cent of caffeine, the benzoate 45.8, and the salicylate 61. The solubility of these double salts is such that solutions can easily be made containing 20–30 ctgr. of caffeine in the cubic centimetre. These salts can always be prepared extempor-

aneously by simple solution in water, in the proportions indicated by the chemical equivalents. As the commercial benzoate and salicylate of soda have sometimes an alkaline reaction they should, for hypodermic use, be rendered neutral with the corresponding acids.

In the discussion which followed the reading of this paper, M. Dujardin-Beaumetz stated that he had employed the double benzoate of soda and caffeine supplied to him by M. Tanret in the cases of two adults attacked, one by diphtheria, the other by cholera, marked by considerable depression of the pulse and algidity, and both patients recovered. Such injections produce neither pain nor induration. The salt named seems specially indicated in diphtheria, because, while the caffeine acts well as a tonic, the specific diphtheritic microbe is probably destroyed, as Letzerich has stated, by the benzoic acid.

In answer to a question M. Tanret said that these double salts would suit equally well for internal administration; it was necessary only to prescribe the desired dose of caffeine, and then to add a sufficiency of benzoate or salicylate of soda to effect complete solution.—*Journal de Thérap.* 25th January, 1882.

Action of Erythrophlein.—Prof. E. Harnack, of Halle, makes a preliminary announcement regarding this alkaloid, the action of which he has recently been investigating. It is derived from the bark of the erythrophleum guineense, and seems to combine in itself the action of digitalin and of picrotoxin; thus, besides having a peculiar action on the heart, it produces convulsions by irritation of the spinal centres. This result is the more remarkable, as hitherto only non-nitrogenous bodies have been found to have either of these effects. It must also be borne in mind that digitalin and picrotoxin are related pharmacologically; Schmiedeberg has shown that when the active constituents of digitalis are decomposed they yield bodies which resemble picrotoxin, and not digitalin, in action.

This new alkaloid is also interesting chemically. When boiled with acids or alkalis it yields two products—a volatile base and a non-nitrogenous body having the properties of an acid. This decomposition is analagous to that undergone by atropine under similar circumstances, that body being, as is well known, broken up into the base tropin and tropic acid. Neither of the decomposition products of erythrophlein resembles the original base in action; the non-nitrogenous

body is practically inactive, while the volatile base somewhat resembles nicotine and pyrrhadin in its effects.—*Cbl. f. d. Med. Wiss.* 4th March, 1882.

Purity of Chloroform.—M. Yvon states that chloroform, however pure, may cause death when used as an anæsthetic, and then the accident may be attributed either to the mode of administration or to the susceptibility of the patient. Special care, however, should be exercised with regard to the occurrence of impurities or spontaneous change in chloroform, and it is important that the physician himself should be able to assure himself of the purity of the agent he employs. The author then quotes the tests proposed by Professor Regnaud in 1878:—

1. The characteristic sweetish odour.
2. Chloroform does not redden litmus.
3. It is neither precipitated nor discoloured on agitating with solution of nitrate of silver.
4. It is not coloured by boiling with a concentrated solution of caustic potash.
5. Sulphuric acid is not blackened by contact with chloroform.

The determination of the density of the specimen, and its boiling point, are of special importance in such an inquiry. No specimen should be considered fit for use as an anæsthetic which does not pass satisfactorily the above tests.

M. Yvon proposes as a further test the use of the following solutions:—Permanganate of potash, 1 gramme; caustic potash, 10 grammes; distilled water, 250 grammes. This solution, reddish violet in colour, is not changed when mixed with pure and rectified chloroform; impure or incompletely rectified chloroform reduces it more or less quickly, and this reduction is preceded by a change in colour from reddish violet to green. [Chloroform containing a little alcohol, not an impurity in a strictly medical sense, changes the colour of Yvon's solution.]—(*Progrès Méd.* 31st December, 1881.) *Journal de Thérap.* 25th January, 1882.

Treatment of *Ascarides Lumbricoides*.—Dr. Guermontprez, of Lille, has arrived at the following conclusions regarding the treatment to be adopted to get rid of the above parasites:—

1. The *semen contra* (santonica) is the remedy to be preferred as a means of killing and expelling these worms from the intestinal canal of man.
2. Santonine does not exactly kill the *ascarides lumbricoides*;

it is an excitant of these parasites, which augments and precipitates their movements, and thus exaggerates the reflex phenomena on the one part and the intestinal obstruction on the other.

3. Santonine is therefore not always indicated in the treatment of these ascarides. While it is harmless if the parasites be young and moderate in number, it is not free of danger, even in ordinary doses, if the worms be large and old and present in considerable numbers.

4. Purgatives are often indicated, and in the hands of many physicians have given better results than vermifuges. The evacuant method will generally suffice for the expulsion of ascarides lumbricoides.

5. Appropriate hygienic measures, devised to remedy the lymphatic condition of many patients, sometimes even a simple change of diet and residence, without having recourse to any medicine whatever, occasionally cause the complete expulsion of ascarides lumbricoides.

6. The treatment therefore depends on the peculiarities of each case.—*Bull. Gén. de Thérap.* 15th February, 1882.

An Instrument for the Removal of Superfluous Hairs.—Dr. L. A. Duhring, Professor of Skin Diseases in the Hospital of the University of Pennsylvania, has devised a very convenient instrument for the removal of superfluous hairs by means of the galvanic current. The device is described in the July number of the *American Journal of the Medical Sciences*, and a cut of the instrument is given. It is of the shape of a thin lead pencil, about four inches in length. The body is of hard rubber, through which passes a metallic rod conductor. The needle is inserted in one end. On the other end of the stem there is an insulated inserting pin attached to the cord leading to the battery. The instrument is well adapted for the operation. The needle should be of steel, and very fine; a No. 12 cambric sewing needle, ground down as fine as possible, will be found the most serviceable.

Damiana.—Damiana is the common name of the *Turnera Aphrodisiaca*, a plant which has long been used by the inhabitants of Mexico as a tonic, in the form of a decoction of the leaves and stalks; they employ it to strengthen them for fatiguing journeys across the mountains, and to restore them after exhaustion. But its principal action is as a tonic and stimulant of the genito-urinary organs of both sexes. In medium doses it is aphrodisiac, alterative, laxative, aug-

menting the sexual appetite, and facilitating the passage of urine; in small doses it has a specific action on all the pelvic organs, giving them tone and augmenting the secretions. It is thus given as an aphrodisiac in spermatorrhœa, in atrophy of the testicles, in incontinence of urine, as a stimulant of the cerebral faculties, in the accidents which accompany premature labour, in difficult menstruation, and in diseases following gestation. The action of damiana is different from that of strychnia, phosphorus, or cantharides; it is not an irritant, but a stimulant of the brain, having a tonic influence on those nervous centres which govern the uro-genital apparatus. In larger doses it excites poisonous symptoms, accompanied by pain in the region of the prostate. It is, further, an excellent laxative.

It is generally prescribed in the form of fluid extract, with equal parts of glycerine and syrup of tolu; it may be taken also in wine. Two to four grammes of this may be given three or four times a day, or thirty to sixty centigrammes of the solid extract.—(*Paris Méd.*, 3rd December, 1881.) *Bull. Gén. de Thérap.* 15th March, 1882.

Treatment of Obstinate Constipation by Extract of Calabar Bean.—Calabar bean, administered to an animal, produces tetanic spasm of the muscular tissues of the bowel, resulting in expulsion of the intestinal contents per anum. This fact suggested to Dr. Schæfer the idea that the drug might prove useful in obstinate constipation, due to atony of the muscular coats of the intestine, such as is often observed in women and in old men. The results of this mode of treatment are reported as satisfactory. The following is the formula of the preparation employed :—

Extract of Calabar bean,	0·05 gramme.
Glycerine,	10 grammes.

Six drops to be taken every three hours during the day. Under this treatment constipation has been overcome within twenty-four hours.—(*Berl. Klin. Wochenschr.*) *Journal de Thérap.* 10th February, 1882.

The Treatment of Poisoning by Chloral Hydrate.—Dr. Kane thus sums up the main facts to be borne in mind in the treatment of cases of poisoning by chloral. The object should be to overcome the tendency to death. First evacuate the contents of the stomach; then treat according to this scheme :—

To stimulate heart.....	<div> <div> Caffein citrate, Strychnia, Digitalis, Atropia, </div> <div> } subcutaneously. </div> </div>
To maintain temperature...	<div> <div>Brandy (subcutaneously and by the rectum). Amyl nitrite (inhalation). Carbonate of ammonia (intra-venous).</div> <div>Wrapping in blankets. Hot bottles to feet and body.</div> </div>
To stimulate respiration.....	<div> <div>Electricity (faradisation of phrenics). Oxygen (inhalation).</div> </div>
To clear mind.....	<div> <div>Shaking. Talking. Douche to head.</div> <div>Strong coffee by the rectum.</div> </div>

Never give beyond $\frac{1}{10}$ grain of atropia in all. The pulse, not the pupil, should be the guide as to when enough has been given. Strychnia may be given freely, $\frac{1}{20}$ grain, followed by $\frac{1}{30}$ or $\frac{1}{40}$ grain, or even more, in an hour's time, if no improvement shows itself, should be given subcutaneously. If the dose of chloral has been large, the strychnia may be used in larger doses.—(*The New York Med. Record.* 19th March, 1881.)—*Practitioner.* February, 1882.

Application of Peroxide of Hydrogen for Medicinal Purposes.—The peroxide of hydrogen has not hitherto played a conspicuous part in therapeutics. The reason for that may be, that formerly pure and durable solutions were not to be had at a reasonable figure. Price, however, is no longer an impediment to its use, and the tendency of the peroxide of hydrogen as at present obtainable to decompose can be considerably restricted; possibly peroxide of hydrogen turned into simple water may formerly have led to wrong conclusions. Peroxide of hydrogen, if preserved in the dark, and in a temperature not exceeding 25° C. (77° F.), keeps unaltered for months. For ascertaining its titre of active oxygen a normal solution of permanganate of potash is requisite; it would be advisable to fix a minimum titre of active oxygen. It is to be supposed that peroxide of hydrogen, like chloride, bromide, and permanganate of potash, is poison to the smallest organisms (bacteria); exact comparative experiments, with a view to ascertain this, are much to be desired, considering the importance of the matter. Experiments with yeast, instituted by the lecturer, had very favourable results, and proved that the germs of the yeast are entirely killed by peroxide of hydrogen, even when greatly diluted.

As regards the fitness of peroxide of hydrogen for treating wounds, caused by syphilitic, scrofulous, and tuberculous ulcers, favourable experience has been gleaned by a physician at Hanover. It is probable that peroxide of hydrogen will do good service in the shape of spray in operating and applying ligatures; this would be important, considering the effect which carbolic acid spray often has on operators and patients.

The great advantages possessed by peroxide of hydrogen, as compared with other media of disinfection, are :—

- (1) Complete absence of smell.
- (2) Yielding oxygen without leaving any other residuum but pure water.
- (3) Absence of injurious influence on the organism.

The workmen occupied in making the peroxide of hydrogen get exceedingly delicate hands, and wounds heal visibly under its influence.

There further seems room for employing the peroxide of hydrogen as a means of disinfecting sick chambers, and generally for purifying the air. It would be advisable to spread, by means of a rafraichisseur, spray of diluted peroxide of hydrogen by way of trial.

Attention must also be drawn to the use of peroxide of hydrogen in dentistry, as has, in the first place, been done by C. Sauer (*Quarterly Review of Dentistry*, 1879, No. iv). Sauer made use of the peroxide of hydrogen with success in bleaching discoloured and carious teeth. In cases where the teeth are covered with coloured matter (*Lichen dentalis*, etc.) he employs peroxide of hydrogen in conjunction with finely levigated pumice stone as a means of cleaning, in place of water. Teeth, the native channels of which were filled with coloured matter, became somewhat paler after several applications. A suitable liquid for cleaning teeth and mouth is prepared by mixing one part of 3 per cent peroxide of hydrogen with ten parts of water. In case of carious teeth the peroxide of hydrogen on wadding was locally used with advantage.—*Pharm. Journ. and Trans.* 11th March, 1882.

The Operative Treatment of Floating Kidney by Fixation.—Mr. Halen says, with reference to a case of the above nature :—"I resolved to relieve the patients by what I may term 'operative fixation.' In both cases the right kidney was extraordinarily movable, the viscus falling across the middle line to the left whenever the patient lay on that side, and sinking deeply into the right hypochondriac region when she stood upright. The patient having been anæsthetised, a

vertical incision was made along the edge of the sacro-lumbalis muscle from the twelfth rib to the crest of the ilium. The quadratus lumborum and external fibrous layer of peritoneum were then cut through, and the kidney with its adipose capsule was drawn backwards into the wound, and then secured with from six to eight catgut sutures. The whole wound was then stuffed carbolic gauze. The cases progressed favourably; the dressings were changed at intervals of five days; and at the end of four weeks the wounds were almost entirely closed, and the kidneys remained firmly attached to the points of suture."—(*Cbl. f. Chir.*)—*Edin. Med. Journal.* February 1882.—J. C. R.

Mosquito Bites.—Mr. Stevenson, of the Army Medical Department, says, regarding mosquito bites—"Various remedies have been recommended, either as prophylactics or as affording relief, such as cocoa nut oil, carbolic acid, solution of ammonia, &c.; but the application I have found most effectual is to smear the hands where bitten with a moist cake of soap, and allow the thin lather to dry into the skin. I have frequently been obliged to resort to this for relief, and have found that all itching and pain had disappeared in ten or twelve minutes after the application was made, and did not again return. Besides being effectual, it has the advantage of being always at hand and easy to use."—*Edin. Med. Journal.* February 1882.—J. C. R.

Resorcin in Stomach Diseases and in Infantile Cholera.—Dr. Andeer relates thirteen cases in which resorcin was used for disease of the stomach, characterised by some alteration of the fluids of that organ. The drug is said to have a detergent action on the mucous membrane, and has not the disadvantages of salicylic and carbolic acids; if it irritates slightly it does not act at all as a caustic, and does not lead to the formation of cicatrices. It further possesses hæmostatic properties. It exercises but a very feeble influence on fermentation, however:

To Dr. Totenhöfer we owe certain researches on the action of resorcin in infantile cholera. He states that it lessens the inclination to vomit without inducing collapse, and diminishes also the number of motions. It is much less irritating than carbolic acid, and has a rapid detergent action on stomach and intestines. Furthermore, its taste is pleasant. It should be given in doses of 10–30 ctgr. in infusion of chamomile. The author had never seen any indication of poisoning. [See Dr.

Murrell's case, in *Med. Times and Gaz.*, 22nd October, 1881.] The cure is generally complete in about six days. In the hands of Dr. Totenhöfer the mortality from this affection was brought down to 15·4 per cent,—*Journ. Méd. Chir. de Pesth*, 13, 1881.) *Bull. Gén. de Thérap.* 28th February, 1882.

Treatment of Blennorrhagia by Permanganate of Potash.—Dr. Gourgues published in Paris last year a thesis in which he discussed very exhaustively the action of permanganate of potash in the treatment of blennorrhagia. His conclusions are—

1. Permanganate of potash is a disinfectant, antiseptic, and astringent, its action varying with the dose.

2. The action of the remedy is seen principally in its influence over purulent discharges, and in particular the purulent discharge of blennorrhagia. This action is antiseptic, and is explained by the decomposing and oxidising effect of the remedy on pus elements.

3. By its direct action on the pus the permanganate prevents auto-inoculation—that is, it prevents inoculation of the healthy parts by the pus of the diseased parts.

4. Its action on the affected mucous membranes is analogous to that of other astringents. The degree of astringency manifested is mild when weak solutions (1 to 500) are used, but is more decided, though borne without actual pain, if a solution of double that strength is employed.

5. On account of its action on organic matter, the solution should be made with distilled water.

6. The permanganate may be injected without inconvenience into the bladder.

7. The employment of this salt is rapidly beneficial in blennorrhagia. An acute discharge may be suppressed within twelve days without the administration of any balsamic preparations. It is equally efficacious in chronic cases, but in such conditions acts more slowly.

8. The permanganate modifies favourably pathological discharges from the uterus.

9. Recourse should not be had to the permanganate till the inflammatory phenomena which mark the onset of acute blennorrhagia have been overcome. The patient should also be put under a strict regimen, and diuretics and baths are useful during the treatment.

10. One inconvenience connected with the use of the permanganate is that it stains linen, on contact with which also it is decomposed. These stains may be removed by

washing with water slightly acidulated with muriatic acid, or salt of sorrel, or lemon juice.

11. In numerous other affections the permanganate of potash proves useful, in virtue of its disinfectant and antiseptic properties, as in ozæna, otorrhœa, cystitis, cancerous or diphtheritic ulcers, &c.

12. Finally, the experiments of M. de Lacerda, of Brazil, seem to show that this drug is an antidote to the snake poison, if given hypodermically within a few minutes after the infliction of the snake bite.—*Bull. Gén de Thérap.* 28th Feb., 1881.

The Subcutaneous Injection of Ether in Pneumonia.—From experience of a number of cases (14) Dr. Barth strongly advocates the subcutaneous injection of about one gramme of ether in adynamic pneumonia. Almost instantly the respiration becomes easier, the pulse gains in strength and fulness, while the colour of the face becomes more natural. In two or three minutes the ethereal odour is noticed in the breath, showing that the volatile liquid has reached the air passages. It is necessary to use the injection at least twice a day, and in severe cases four doses may be thus administered in the twenty-four hours without any inconvenience. Dr. Barth has not exceeded this dose, nor has he experienced any trouble from the punctures in the way of serious irritation.—*Lyon Médical.* February 1882.—J. A. A.

Urinary Calculus in an Infant.—J. W. Troizki reports a case (*Wratsch.*, No. 37, 1881) of calculus in a child one month old. The child, a boy, was healthy in appearance and generally, but had been observed to scream during micturition since he was a week old, and the stream of urine was interrupted. The mother had also found that when the child was laid upon its back, with the head low, micturition was free and apparently painless. When the child was seen by the surgeon, there had been complete retention for twenty-four hours. The bladder was found over-distended, and further examination detected the presence of a hard foreign body in the urethra. The canal was lubricated by injecting almond oil, and the foreign body was pressed out, the meatus having been dilated to allow it to pass. It was then found to be a calculus (urates), weighing .25 gr., and 8 mm. long by 5 broad. From its size, the surgeon is of opinion that its formation must have commenced before the birth of the child.—*Centralbl. f. Chir.* No. 47, 1881.—D. M'P.

Treatment of Pigmentary Spots.—Dr. Unna, of Hamburg, recommends a plaster of white precipitate, or simple mercurial plaster, as an excellent application for causing the disappearance of ephelides and such pigmentary spots. The plaster is applied in the evening, after washing the parts with Eau de Cologne or alcohol, and is removed next morning. To hide the spots during the day, Dr. Unna advises that the following inoffensive preparation should be used :—

Subnitrate of bismuth,	5 parts.
Kaolin,	5 parts.
Vaseline,	20-40 parts.

By using these preparations of mercury and of bismuth alternately, pigmentary spots are soon made to disappear without other alteration of the skin.—(*Le Médecin Praticien.*) *Lyon Médical.* 11th September, 1881.

Syphilis Communicated by Skin Grafting.—Deubel (*Gaz. Méd. de Paris*, No. 45, 1881) relates a case of skin grafting where grafts were taken from a young man, aged 25, and applied to a large ulcer resulting from gangrenous erysipelas in a man aged 49, his father. A month after the transplantation, an ulcer formed in the cicatrix, followed by syphilitic roseola. It was then found that the son was, and had been at the time the grafts were transferred from him to his father, suffering from secondary syphilis. Specific treatment cured the ulcer slowly.—*Centralbl. f. Chir.* No. 50, 1881.—D. M.P.

The Treatment of Pruritus Vulvæ.—Pruritus vulvæ, as is well known, is an exceedingly obstinate affection. Dr. Besnier has successfully treated a patient whose pruritus had previously resisted all other applications by using a diachylum ointment made according to the following formula :—

R. Ungt. diachyli simplic.
Olei olivæ, aa. æq. part.

Dr. Delaporte has also employed with success the following lotion in pruriginous affections :—

R. Water, 300 grams.
Glycerin, 100 grams.
Eau de Cologne, 75 grams.
Carbolate of soda, 2 grams.

These lotions should be repeated whenever the itching is severe, and especially at night, before going to bed. The application should be cold, and should be made with a fine sponge dipped in the lotion. (*Le Progrès Médical*. October 1, 1881.)—*Practitioner*. January, 1882.

Capsicum in the Treatment of Uterine Hæmorrhages.—The successful use by Dr. Allègre, of the powder and watery extract of capsicum annuum in the treatment of piles, has led Prof. Chéron to consider the physiological action, and to extend the use, of this drug. After a large number of experiments Prof. Chéron has arrived at the conclusion that it acts upon the vascular system, and more especially upon those organs and tissues in which there is an extensive capillary circulation, such as the utero-ovarian and respiratory tracts, as well as the brain. Cayenne pepper acts, like ergot, either directly or through the vaso-motor nerves, upon the unstriated muscle fibre of the vascular walls. It is, however, more useful than ergot, since it is readily tolerated by the stomach, whose functions it improves. Prof. Chéron has employed the remedy for some years in cases of uterine hæmorrhage, due to fibroids, to granular endometritis, or epithelioma. He finds the following are the best formulæ:—

1. Powdered capsicum five grams, for thirty pills. A pill to be taken after each meal; the number to be increased up to six a day.

2. Watery extract of capsicum, 5 grams, for thirty pills, to be taken as above.

3. Tincture of capsicum, 5 grams.
Rum, 30 grams.
Gum julep, 120 grams.

A dessert-spoonful to be taken every two hours. Capsicum is also of service in that form of congestive headache which is so common in rheumatic patients, as well as in the hæmoptysis of phthisis. (*Le Progrès Médical*. Oct. 15, 1881.)—*Practitioner*. January, 1882.

Treatment of Lupus by means of Iodoform.—Riehl records (in *Wiener Med. Wochenschrift*, No. 13, 1881) the results of the treatment of twenty cases of lupus by the external use of iodoform. On non-ulcerated parts—that is, wherever the epidermis is intact—iodoform has no effect. But when applied to ulcerated nodules, it at once arrests suppuration, and causes absorption of the infiltration. Where the

lupous deposit is deep-seated, Riehl directs that the epidermis should be macerated by the application of a strong solution of caustic soda. When the caustic has acted sufficiently the superfluous fluid is dried off and the part thickly dusted with iodoform; over this cotton wool is laid, and kept in place with adhesive plaster. This dressing is left undisturbed for three to eight days. When it is removed the part is found to be cicatrised and depressed, and nearly free of redness and swelling. If the patches of lupus be large, this proceeding has to be repeated several times; in such cases, also, anæsthetics may be required, on account of the pain produced by the caustic.—*Cbl. f. Chir.* No. 32, 1881.

Aseptic Vaccine Lymph.—Dr. R. Pott contributes to the *Jahrb. f. Kinderheilk*, N.F. xvii, p. 172, the results of some experiments with vaccine lymph, modified by combination with salicylic, boracic, and carbolic acids. The mixtures employed consisted of salicylic acid solution (1 to 300), boracic acid solution (3·5 per cent), and carbolic acid solution (1 to 5 per cent), each of these being combined with an equal part of humanised lymph. All proved active except the 5 per cent carbolic acid solution. The author claims the following advantages for these aseptic lymphs:—1. That the "erysipelatosus poison" contained in the lymph is probably destroyed, and the early vaccinal erysipelas in this way prevented; 2. That such lymph may be kept for years without spoiling; 3. That the lymph is thinner and contains no fibrinous coagula.—*Cbl. f. d. Med. Wiss.* 18th March, 1882.

The Treatment of Chlorosis.—Dr. Zander is opposed to the theory which accounts for chlorosis upon the hypothesis that the food is deficient in iron. He rather supposes that the fault lies, not in an insufficient quantity of iron in the food, but in insufficient absorption of such iron as is present, owing to morbid changes in the secretions of the digestive tract, more especially owing to the absence of a proper proportion of hydrochloric acid in the gastric juice. As a result of this the proteid foods are incompletely digested, and nutrition is affected. In the treatment of chlorosis the author therefore prescribes 2 to 4 grams of hydrochloric acid diluted with 200 grams of water: a tablespoonful or two to be taken after each meal. In very obstinate cases pepsin may be mixed with the acid, and the results thus obtained are said to be most satisfactory. (*Le Progrès Médical*. Nov. 12, 1881.)—*Practitioner*. February, 1882.

A Precursory Sign of Pulmonary Phthisis.—In the *Courrier Médical* for December 1881, Dr. Coiffier has published a short article that is worthy of serious consideration. Dr. Coiffier, who seems to be a careful and minute observer, claims that with young people the co-existence of a clean tongue, with a pulse of 85 pulsations, is an almost certain indication of the approaching development of pulmonary phthisis. As a rule, these patients are on the average between 18 and 30 years of age, and seem to enjoy excellent health. Dr. Coiffier gives four very conclusive observations. He believes that a high pulse with clean tongue will warn the physician of the advent of tubercle before auscultation reveals its existence.—*Lyon Médical*, December 1881.—J. A. A.

Action of Pulsatilla.—M. Broniewski finds that pulsatilla, in the form of extract, tincture, infusion, and decoction, and its active principle anemonin, proves highly poisonous to frogs and rabbits. In frogs large doses rendered respiration and the heart's action slower within 10 to 15 minutes; smaller doses, in the course of one day. The animals were dull, sat with the head bent forward, and with the extremities half extended, and either did not respond to powerful stimulation or only endeavoured in a languid manner to move. Cutaneous sensibility and irritability remained intact, while muscular irritability was lessened; the heart's action persisted after respiration had ceased, and death took place within 3 to 4 hours after large doses, within 24 hours after small ones.

Rabbits showed first great weakness and tremor, then a rapidly increasing dyspnoea, which ended fatally on the appearance of paralysis of the extremities, which spread gradually from before backwards. Section revealed severe hyperæmia of the lungs, with inflammatory appearances in the intestinal canal.—(*Diss. Berlin*, 1881.) *Cbl. f. d. Med. Wiss.* 11th March, 1882.

Subjective Symptoms in Eye Diseases.—Dr. G. A. Berry concludes an able article on this subject as follows:—"The prognosis is good if there be diminution of central vision without any limitation of the field, or if the limitation takes the form of hemianopsia in which the portions affected are sharply separated from those in which the function is retained. If, on the other hand, there be limitation of the field, even without any apparent cause, the probability of subsequent atrophy and blindness is very great, and is all but certain if there be a previous atrophy of one eye. A good deal of

prognostic significance, however, attaches to the time which elapses for the production of a defect in the field. Generally speaking, the limitations which come on suddenly are not so liable to end in atrophy as those of slow, gradual invasion; but here again, we must keep in view the known or probable nature of the central causes, as it is evident, for example, that any sudden alteration appearing after a lesion of traumatic, apoplectic, or even embolic origin would necessitate a more serious prognosis than a similar change, owing its existence probably to vasomotor, hysterical, reflex, or other more or less obscure functional disorders."—*Edin. Med. Journal*. February 1882.—J. C. R.

Action upon the Fœtus of Medicines taken by the Mother.—Dr. Kubassow has employed the microphone to observe the condition of the foetal heart, and thus to judge of the action upon it of drugs administered to the mother. He arrived at the following results:—Chloral hydrate and chloroform first excite and then stupefy, causing the foetus to become quieter, and the heart sounds duller and slower. They act in five or ten minutes, the action of chloral being more powerful than that of chloroform, and especially marked when given as an enema. Both of them can be detected chemically in blood from the umbilical cord. Chloral hydrate depresses the temperature of the mother after two to three hours. Opium and its alkaloids caused distinct and persistent rhythm of the foetal heart. They act more slowly than chloral and chloroform, and their action lasts longer. The opium acts more powerfully and quicker by the mouth than by enema. Its action probably depends on the morphia which it contains. Digitalis also acts powerfully and persistently. The author considers that the chloral hydrate taken by the mother is divided between her body and that of the foetus proportionately to the weight of each. This occurs in fifteen minutes, so that at the end of that time five per cent of the chloral given to the mother has passed into the blood of the foetus. The chloral hydrate is not decomposed into chloroform. More than half a gram of chloral hydrate in enema, either given at once or repeated in less than half an hour, or more than 15 minims of tincture of opium given at once, or repeated in less than an hour, are dangerous to the foetus. Opium should not be given to pregnant women in doses exceeding a quarter of a grain.—*Centralblatt f. Gynäkologie.—Practitioner*. January, 1882.

Glass as a cover for Dissecting Tables.—Mr. C. W. Cathcart writes as follows on the above subject:—"Having had occasion to re-cover one of the dissecting tables at Surgeon's Hall, I substituted thick glass for zinc, and have found it answer so well that I have thought it worthy of being brought before the notice of others. The glass used is about half-an-inch thick, polished on one side, and ribbed or grooved longitudinally. The table is spread with soft putty, and the glass—cut to the exact size—is pressed evenly down upon it with the polished side uppermost, one end of the table being slightly raised. The margins of the glass are secured with a border of lead (or wood) which goes all round except at the lower end, where a wooden gutter is fixed to carry off fluids which drain down along the grooves. The surface of the glass can be kept beautifully clean by simple wiping. With glass of half-inch thickness firmly embedded in putty, any ordinary wear and tear need not be feared, although it would be unwise to test its strength by direct hammering. The price, with lead margins, runs about 28s. per cover, *i. e.*, 12s. for glass, 4s. 6d. for putty, 5s. 6d. for lead, and 6s. for workman's time and wooden gutter. If the margin—which has been found practically unnecessary—were omitted, the cost would be considerably lessened, both for time and material. The consistence of the putty requires special attention. It should be so soft that it can readily adapt itself to the table and glass, and for this purpose requires a much larger proportion of oil than is necessary for ordinary glazing purposes.—*Edin. Med. Journal.* February 1882.—J. C. R.

Sea-Sickness.—J. R. Stocker, M.B., medical officer in the service of the Cunard line of steamships, contributes to the February number of the *New York Medical Journal and Obstetrical Review* an article in which, after deprecating the tendency to resort to special drugs in a routine manner in the treatment of sea-sickness, he suggests the following theory of the mode in which the affection is produced:—"The pneumogastric nerve sympathizes with the senses and the intellect, and plays an active part in that expression of disgust which results in vomiting. Stimulation of the nerve, in moderation, favours digestion and the various other processes of organic life; in excess it irritates them. It directly occasions nausea, dyspepsia, flatulence, vomiting, &c.; and, indirectly, all the other sad effects of sea-sickness. The nervous centres, excited by the sensory impressions, become at last so irritable that the introduction of anything into the stomach is resented, and

vomiting occurs ; until, sooner or later, the nervous system is dominated by that potent influence for good or evil, the force of habit, and the body finally becomes accustomed to the new sensation. The study of sea-sickness teaches us that there is in us a sense which, without some such experience, we might perhaps be slow to recognize—the sense of passive motion. It may not indeed be so exalted a sense as others, nor so important, but it is certainly one which, in sea-sickness, deserves consideration. Conditions which some other observers refer to the falling weight of the viscera, the author is inclined to attribute to a cause a little more remote, but produced partly by that agency. He believes that the feeling of nausea, &c., which ensues upon the falling of the vessel is the same as that due to the backward movement of the swing, or of any vehicle, the downward movement of an elevator, vertical or oblique, as well as in the dance, &c. ; and is brought about by the formation of a partial vacuum in the lung. To this cause he also attributes the condition known as *mal des montagnes*. We have in sea-sickness conditions almost precisely similar to those of the latter affection, with regard to the effect as well as to the cause : a certain rarefaction of the air within the chest ; a partial vacuum produced, not indeed by the rarefaction of the atmosphere itself, but by the subsidence of the abdominal viscera when the vessel falls, and therefore felt more in the upright than in the horizontal position ; and the continued movement of the body. The first, *i. e.*, the want of air, is the cause more particularly of that feeling of “goneness” we so often hear complained of. The author has been in the habit of recommending patients to take a deep breath whenever they felt that sinking at the pit of the stomach, having found it by experience to be an effectual, though not infallible, means of allaying the sensation, and to this he would refer the good effect of singing or of any rhythmic movements that may tend to relieve the mind or to regulate the breathing, as well as the advantage sometimes derived from weight or pressure applied to the stomach by elastic and other belts, or bandages. The second, *i. e.*, the movement, is the cause more especially of the irritable condition of the nervous system. The secret of the one is its direct effect upon the pulmonic branches of the pneumogastric nerve, probably the result of a partial paralysis. The secret of the other is its indirect effect upon the same nerve, through the media of the nerves of feeling or common sensation, sometimes indeed through the agency of other senses, as, *e. g.*, by the sight of undulating movements, and by other unpleasant sensations. In each case, practically, the

cause is of an eccentric or peripheral character. Similar views, the author remarks, were expressed, some fifty years ago, by Herbert Mayo. As to the treatment, sedatives, both nervine and stomachic (for they too will influence the terminal branches of the pneumogastric nerve), anodynes and anæsthetics, including amyl nitrite, are good. So also are stimulants. Aperients are exceedingly useful. But in this, as well as in most other complaints, there are certain stages or periods: the first, one of great nervous depression; the second, one of gastric and nervous irritability; the third, one of exhaustion. The use of the bromides for sea-sickness is increasing daily, and he cannot but condemn the practice of using them so indiscriminately and in such large quantities as has lately been recommended. While there is no specific remedy or panacea for the disorder, many of the conditions may be relieved by medicine. Sea-sickness, after all, is but a form of passive indigestion, the result of a functional neurosis in which the pneumogastric nerve is either excited or depressed.

Books, Pamphlets, &c., Received.

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- The Other Side of the Opium Question. By W. J. Moore, L.R.C.P.Ed., &c. London: J. & A. Churchill. 1882.
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- Obstetric and Gynæcological Literature, 1876, 1880. By James R. Chadwick, Boston, Mass. Reprinted from the *Boston Medical and Surgical Journal* of 8th Sept., 1881. Cambridge: U.S.A. 1881.
- Lectures on the Pathology and Treatment of Lateral and other Forms of Curvature of the Spine. By Wm. Adams, F.R.C.S. Delivered at the Grosvenor Place School of Medicine in the Session of 1860-61. Illustrated by Five Lithograph Plates, and Seventy-two Wood Engravings. Second Edition. J. & A. Churchill. 1882.
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- The Study of Trance, Muscle-Reading, &c.** By Geo. M. Brand, A.M., M.D. New York. 1882.
- The Diseases of the Spinal Cord.** By Byrom Bramwell, M.D. Edinburgh : Maclachlan & Stewart. 1882.
- A Study of Tumours of the Bladder.** By Alex. W. Stein, M.D. New York : Wm. Wood & Co. 1881.

THE
GLASGOW MEDICAL JOURNAL.

No. V. MAY, 1882.

ORIGINAL ARTICLES.

THE TREATMENT OF CERTAIN INTRACTABLE
FORMS OF PURULENT DISCHARGE FROM
THE EAR.

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(Read before the Medico-Chirurgical Society of Glasgow, 3rd March, 1882.)

(With a Woodcut.)

IN by far the greater number of cases of purulent discharge from the ear the source of the secretion is in some part of the middle-ear. Stretched across the inner end of the external auditory canal, at about the distance of an inch from the outer orifice of the ear, is a membranous partition—the tympanic membrane—which, in its normal condition, effectually shuts off the middle-ear from the external auditory canal. But supposing the whole of this membranous partition were destroyed, we could see from without only a very limited portion of the middle-ear, for only a part of the tympanum would be exposed to view. An important part of the tympanum, the whole of the Eustachian tube and the whole of the mastoid cells, would still be invisible and, in great part, inaccessible to direct manipulation. In a large number of cases the purulent inflammatory process is mainly confined to the part of the middle-ear which lies opposite to the tympanic membrane. My paper to-night does not include the consideration of these cases. I wish to occupy your attention with the

cases in which the purulent process has extended, and ultimately become limited to regions of the middle-ear where, in consequence of anatomical peculiarities, it tends to persist for an indefinite period, and to resist ordinary means of treatment. I refer to the upper tympanic cavity and the antrum mastoideum.



Inner aspect of the outer half of the temporal bone exposed by a vertical section made antero-posteriorly through the tympanum, antrum mastoideum, and other mastoid cells.

- A, Antrum mastoideum.
- B, Mastoid cells.
- C, Inner surface of tympanic membrane.
- D and E, Head of malleus and body of incus, forming the osseous partition dividing the upper tympanic space into two compartments. In the drawing the outer compartment is concealed by these two bones.
- F, Chorda tympani nerve.
- G, Fossa for jugular vein.
- H, Pyramidal partition of bone separating the cavity of the tympanum from the antrum mastoideum. Below the letter H a portion of the canal for the facial nerve is shown.
- I, Dura mater.

The upper tympanic cavity is situated higher up than and somewhat behind the level of the upper edge of the tympanic membrane (Rivinian segment), so that although the whole of the membrane were destroyed this part of the tympanic cavity would still be invisible from without. The outer wall of this space extends from the upper edge of attachment of the tympanic membrane as far as the roof of the tympanum, and measures from five to six millimetres in height. This osseous wall is continuous behind with the outer wall of the antrum mastoideum. This part of the tympanic cavity contains the head of the malleus and the body of the incus. These two bones are here articulated together in such a way as to form an osseous partition, incompletely dividing the space into an

outer and inner narrow compartment, the inner being the wider of the two. If a fine probe, bent at its point, were introduced within and above the edge of the back part of the Rivinian segment, it would pass into the outer compartment of this space, and if pressed far enough in, would enter the opening into the antrum mastoideum.

The upper tympanic space which we have just described passes directly backwards into the antrum mastoideum. This is a large mastoid cell with which all the other cells directly or indirectly communicate. It is of so considerable a size as to have received the distinctive name of antrum mastoideum. In early childhood, while the other mastoid cells are very rudimentary, being represented only by porous bone, this cell is as perfectly developed as in mature age. When this space has been for a great length of time the seat of purulent accumulation, it may become of much larger dimensions than in the normal condition, owing to the pressure exercised upon its walls.

The tympanum and antrum mastoideum are roofed in by one and the same lamina of bone, separating both spaces from the dura mater above. But while they are continuous at the upper part, the lower two-thirds of these cavities are separated from each other by a thick pyramidal partition of bone, in consequence of which the floor of the antrum is at a much lower level than its opening of communication with the tympanum. The upper or narrower part of the partition between the antrum and the tympanum is a rounded ledge which forms the floor of the passage of communication between the tympanum and antrum. On this ledge the short process of the incus rests as on a pivot. The canal for the facial nerve, in a part of its course, is contained in the partition referred to, and at another part of its course this canal is in close relation with the inner wall of the upper tympanic space.

In nearly all cases of chronic purulent disease of the middle ear, there is more or less destruction of the tympanic membrane. Through the opening thus formed, which may amount to only a pin point perforation, or to almost total destruction of the membrane, the purulent matter finds its way to the outer orifice of the ear. In the cases which form the subject of my paper to-night, the perforation is generally in that part of the tympanic membrane, known as the *membrana flaccida*. This is the upper segment of the membrane, and is thinner and more flaccid than its other part, being composed of only very attenuated mucous and cutaneous layers, while the rest of the membrane has an additional very strong fibrous layer. It fills

up the Rivinian segment or part where the annulus tympanicus is defective, and is bounded below by the short process of the malleus and the anterior and posterior folds of the membrane, while above it is bounded by the lower edge of the outer osseous wall of the upper tympanic cavity. Opposite the middle of this flaccid membrane we have the neck of the malleus, while behind we find a portion of the long process of the incus. In the purulent diseases of the ear which I am speaking of, we sometimes find a very small perforation in this membrane, from which a small quantity of pus now and again escapes. Or the part of the membrane behind the neck of the malleus may be destroyed, or the whole of the *membrana flaccida* may be gone, the neck of the malleus being exposed and a copious fetid discharge issuing from the opening. In some cases, however, the *membrana flaccida* is the only part of the tympanic membrane which remains, all the rest being lost, probably by disease which had previously existed farther down in the tympanum. Here the pus is seen to issue from under the intact part of the membrane.

From the anatomical features which I have described, it is evident that purulent or other inflammatory products are very apt to be retained in the upper tympanic cavity and antrum mastoideum, thus maintaining and aggravating the suppurative process:—1st. The floor of the antrum mastoideum is at a lower level than its outlet; 2nd. The osseous partition, formed by the malleus and incus, impedes the escape of the secretion both from the antrum and from the upper and back part of the tympanum; 3rd. Secretion is also apt to collect and lie upon these ossicles; 4th. The swollen, thickened, or hypertrophied condition of the mucous membrane, usually existing in connection with purulent processes, as well as the formation of adhesions, adds to the difficulty of exit of secretions.

Again, owing to the peculiarities of structure and relationship of this part of the middle ear, purulent inflammation having its seat here is more likely to be attended by the following symptoms and complications:—1st. By great impairment of hearing, from injury to the chain of ossicles; 2nd. By great fœtor of the discharge, from its tendency to accumulation and consequent decomposition; 3rd. By greater danger to life, either from extension of the disease to the dura mater, or from blood infection by absorption of the decomposing pus; 4th. By greater danger of facial paralysis, from implication of the Fallopian canal.

The circumstances which hinder the complete evacuation of the inflammatory products formed in these parts of the

middle-ear also prevent the efficient use of cleansing and medicated solutions. When the ear is syringed in the ordinary way these regions of the middle-ear are beyond the influence of the injected fluid, and therefore the preliminary to any successful treatment, namely, thorough cleansing away of the products of the suppurative inflammation, cannot be attained. In order that the treatment may be efficient, we must be able to evacuate the purulent contents from these concealed parts, and apply to the source of the secretion cleansing, disinfecting, and healing agents. While I am not prepared to say that these cases can all be treated with complete success, I believe that many cases which are but little improved by other treatment may now, by the methods which I am about to describe, be successfully dealt with.

We frequently find on our first examination that polypoid growths, or granulation tissue, occupy the place where the membrane is destroyed, and so tend still further to obstruct the outlet for the confined pus. These must first be removed or destroyed by the ordinary methods of treatment. If, however, after this has been achieved, the treatment is brought to an end, while the purulent process still continues, these polypi or granulations will very soon form again, owing to the irritating effect of the pus coming down from above, and the parts will then return to the condition in which they were at the beginning of treatment.

Supposing that, as the result of preliminary treatment, the opening in the membrane is free from any polypoid or granulation growths, our next object is to reach the real source of the mischief in the upper and back part of the tympanum and antrum mastoideum.

Let me describe the various steps to be taken in carrying out the treatment which, I think, is the most efficient.

After syringing the ear in the ordinary way with a weak watery solution of carbolic acid, and thus washing away all secretion contained in the external auditory canal, the accessible parts are to be carefully and thoroughly dried by absorbent cotton, applied through a speculum. It is hardly necessary to state that all the manipulations here described must be effected while the interior of the ear is well illuminated by means of a concave reflecting mirror attached to the forehead. All moisture having been removed from the accessible parts, Siegle's pneumatic speculum is to be fitted air-tight into the external auditory canal, and suction employed with the mouth, or by an india-rubber ball. During

the act of suction we shall generally see pus exuding from the parts above and behind. This pus, which has generally a very foetid odour, is then removed by means of absorbent cotton, and suction again employed in the same way until no more purulent secretion appears at the opening in the membrane. A little blood is sometimes drawn out of the congested vessels by the effect of the suction, but never in any great quantity, and should simply be wiped away.

We then proceed to cleanse away, as far as possible, any remaining purulent or caseous debris contained in the upper tympanic cavity and antrum mastoideum. This is done with a watery solution of carbolic acid, or of boracic acid, injected with a proper kind of syringe, which is used directly to the interior of the middle ear. I employ a middle-ear syringe, similar to one described by Hartmann in the *Deutsche Medicinische Wochenschrift*, No. 44, 1879. This is a vulcanite syringe, capable of containing about two drachms of fluid, and having a short nozzle. To this nozzle is fixed, in a movable way, a fine silver canula, six centimetres in length, and having a lumen of one millimetre in diameter. The one end of the canula has a funnel-shaped opening, which fits accurately over the nozzle of the syringe. The other end, which is as small as possible, is bent at an obtuse angle, and is intended for introduction into the middle-ear through the perforation in the membrane. In order that the syringe and the hand of the operator may not obstruct the view, the canula has another bend in an opposite direction, near its attachment to the nozzle.

The canula may be connected with the nozzle of the syringe through the intervention of a small piece of india-rubber tubing. This arrangement prevents the force of the thumb in depressing the piston of the syringe being communicated to the silver tube, which force might propel its point upon the mucous membrane of the tympanum, causing pain, and probably injury.

When the sensitiveness of the parts is such that the hard metallic point of the tube cannot be tolerated by the patient, I make use of a piece of the small tympanic tube (Paukenröhrchen), introduced by Weber-Liel, for conveying fluid into the tympanum by the Eustachian catheter. This piece of the Paukenröhrchen should be six centimetres long, and should include the widened end which can be fitted on to the nozzle of the syringe. The material of which this tympanic tube is made, on account of its softness and elasticity, produces no irritation, but, on the other hand, these

same qualities render it liable to be displaced from its position when the stream of liquid is forced through it.

Dr. Blake, of Boston, describes another form of middle-ear syringe in the *American Journal of Otology* for January, 1880. In his syringe the canula is fixed to the syringe by a screw, and when a medicated solution is to be employed Dr. Blake first removes the canula, and then screws a small glass tube on to the nozzle of the syringe. The medicated fluid is then drawn into the glass tube, to the outer end of which the fine canula is then screwed, and the injection used.

The solution of carbolic or boracic acid, after being warmed, is drawn into the syringe, the silver canula of which is then carefully passed through the speculum into the inner end of the external auditory canal. Its bent point, directed upwards, is cautiously placed in the aperture from which the pus was seen to exude. When the point of the canula is in proper position, the syringe being held between the index and middle fingers of the right hand, the piston of the syringe is pressed slowly inwards with the thumb. If there is an india-rubber tube connecting the canula with the syringe, when the point of the canula is in position, its outer end is held between the thumb and index finger of the left hand, the latter being steadied by resting the remaining three fingers upon the side of the head. At first a stream of only feeble force should be used, and only one or two syringefuls injected at a sitting; afterwards, however, a stronger stream and four or five syringefuls may be injected with advantage.

There are great differences among patients in the degree of sensitiveness of the mucous membrane of the middle-ear to the touch of the instrument. Many seem to have little, if any, discomfort, while, on the other hand, a few are not able to tolerate the pressure of the metallic canula. Sometimes, slight giddiness is complained of, while the stream of fluid is passing upwards, but this is rarely severe, and after a few applications it is no longer experienced.

By the use of the syringe we often succeed in dislodging and bringing away considerable quantities of cheesy-looking masses. Generally, however, several sittings are necessary, at intervals of two or three days, before such material is brought away.

After taking these cleansing and disinfecting measures until we think the most of the purulent and caseous debris has been removed, some more powerful injection must be applied. Probably the best is a strong solution of nitrate of silver (30

grains to the oz. of water), ten drops of which, after being warmed, are injected by the middle-ear syringe and the elastic tube. Before this injection is used, and after the cleansing injection, the accessible parts must be carefully dried, and any of the liquid which remains in the concealed parts should be sucked out as far as possible by Siegle's speculum used as already described. The more thoroughly the mucous membrane intended to be treated is freed from all moisture, the better will be the therapeutic effect of the nitrate of silver. I have in some cases used a solution of sulphate of zinc, but I think the nitrate of silver is the more useful, although it is the more troublesome in consequence of the precautions necessary to prevent blackening the skin of the external auditory canal. After the use of the solution of nitrate of silver, the external auditory canal is mopped out with a warm solution of salt and the accessible parts again carefully dried. Lastly, if the perforation in the membrane is of some size, finely powdered boracic acid should be insufflated as recommended and described by Bezold in the *Archiv für Ohrenheilkunde*, Jan. 1879. While the powder is insufflated so as to cover the exposed part of the tympanic mucous membrane it is not to be tightly packed, in case it should hinder the escape of the purulent matter from the deep parts. Applied in the way I have mentioned it forms an antiseptic covering, and keeps the parts dry for a time. The treatment which I have described ought to be repeated frequently at intervals of three days.

The following three cases were treated in the manner I have now described. Other cases have been treated by me in a similar way, and with good results. It will readily be understood, however, that where caries exists or where the seat of the discharge extends to the remote mastoid cells, we can succeed only in ameliorating the condition of the ear. These three cases had been treated at some time or other by aural specialists who had employed packed boracic acid, rectified spirits, iodoform, &c., to the exposed parts. They are thus clearly cases in which the improvement or cure was the effect of this mode of treatment.

CASE I.—A gentleman, aged 42, suffered from a purulent discharge from the left ear since he was 16 years of age, with a few short interruptions. An impression of cold was the only cause assigned for the diseased condition of the ear. Patient was not very robust. There seemed to be no family tendency to ear disease. The discharge was always remarkably fetid, but seldom very copious. He had occasional attacks of

giddiness, especially when the interior of the ear was manipulated. On one occasion, at the beginning of treatment, there was distinct syncope when the interior of the ear was being dried. There was no tinnitus. The vibrating tuning fork, applied to the middle line of the head, was heard much better on the left side, that on which the purulent disease existed. A watch, heard normally at a distance of 40 in., was not heard even when pressed upon the ear. The whispered voice was heard very close to the ear. While ordinary conversation was heard quite well by the opposite ear, there was some impairment of hearing on that side also in consequence of chronic dry catarrh in the right ear.

On clearing away the discharge I found that the *membrana flaccida* behind the neck of the malleus was gone. The existing part of the tympanic membrane was much thickened. By suction, pus was seen to issue from the direction of the upper tympanic space and the entrance to the antrum mastoideum. A number of small granulations covered the situation of the lost membrane. Patient had been treated by an aural specialist, but the discharge still continued. I treated the case in the manner already described for a period of about three months. The parts after that became quite free from secretion, and there has been no discharge for nine months.

CASE II.—A young lady, 15 years of age, had had a very profuse purulent discharge, with occasional admixture of blood, from the right ear, for seven years. There had also been some discharge from the left ear, but this had ceased some time before she came to consult me. The discharge was extremely offensive to the smell, and was so copious as to be almost constantly escaping from the external opening of the ear. As a very young child, she was pretty strong, but for three years had suffered from chorea, which had been sometimes better and sometimes worse. Pain was often complained of in the region of the right mastoid process, but no swelling or redness was visible there. She was also subject to attacks of giddiness. There was no family tendency to ear disease. The hearing on the diseased side was $\frac{1}{4}$ and the whispered voice was heard a yard distant. The origin of the disease could not be traced.

After syringing the ear in the ordinary way and drying the parts, I found that the whole of the tympanic membrane was destroyed, with the exception of a small part at the antero-superior periphery. None of the ossicles could be seen. The mucous membrane of the tympanum was whitish, and free

from any congestion or swelling. On employing suction, however, it was clearly evident that the pus was coming from the upper and back part of the tympanic cavity. From its quantity I concluded that it had its source chiefly in the antrum mastoideum, but probably in some of the other mastoid cells as well.

This patient had been treated by several surgeons and by one aural specialist. In addition to other treatment she had had cantharides plasters applied all over the scalp, at intervals of two weeks for three months. This was the treatment recommended by an eminent physician who had in view the "drawing of the disease to the surface." An aural specialist had treated the ear by means of iodoform insufflated, and by other remedies very suitable for ordinary cases of chronic purulent disease of the tympanum. No distinct effect for good followed the treatment.

From the symptoms and from the history of the case, I feared caries of some part of the petrous or mastoid bone, and was not very hopeful of success in my treatment. I have treated her for three or four months in the way I have described, but instead of using the nitrate of silver I have used a solution of sulphate of zinc. I now employ the injection about once in the fortnight, and insufflation of boracic acid is carried on by the mother in the interval. All fœtor is now gone, and the discharge only moistens the ear every second or third day. The chorea is markedly improved and giddiness is never complained of; but as to whether we shall succeed in permanently and completely putting a stop to all purulent formation, I am not yet able to say. That point will probably depend upon whether caries exists or not.

CASE III.—A young gentleman, a medical student, suffered from a suppurative discharge from the left ear since early childhood. He could not account for the origin of the disease. The tick of the watch could not be heard on pressure, nor was the voice heard on that side, even when raised to loudness. The tuning fork applied to the middle line of the head was heard much more distinctly on the affected side. The discharge from the ear was copious and very offensive to smell.

On examination of the ear, the back part of the *membrana flaccida* and a part of the rest of the tympanic membrane below were destroyed, and the exposed mucous lining of the tympanic cavity was thickened, but without granulations upon it. The opening backwards and upwards towards the antrum mastoideum was more capacious than is usually found, and, by

suction, pus appeared at the opening. The neck of the malleus was exposed, and the existing part of the tympanic membrane was much thickened.

The case had been previously treated by means of boracic acid packed into the ear, which somewhat diminished the discharge, but only partial and transient benefit had resulted from the treatment.

I carried out the treatment which I have described in this paper, using the strong solution of nitrate of silver. It was repeated at intervals of a few days for about two months. No discharge has been visible for the past three months, during which no treatment has been necessary.

HEALTH RESORTS AT HOME AND ABROAD.

No. II.

By M. CHARTERIS, M.D.,

Professor of Therapeutics and Materia Medica, Glasgow University.

WE have seen that the waters of Bath contain only a small percentage of lime, and so also do those of Malvern and Buxton, but in an even more infinitesimal quantity. You may naturally ask, Have we then at home any waters of more purely medicinal value—some that possess more active compounds of the *materia medica*? When speaking about cathartics I indicated that two well known representatives of this class were denominated Glauber's and Epsom salts—the former being the sulphate of soda, the latter the sulphate of magnesia. Have we waters representing these two potent yet safe compounds? And can they be recommended as purgatives? The answer to both inquiries is in the affirmative.

Typical examples of what may be termed saline mineral waters are found at Cheltenham (Gloucestershire), Leamington (Warwickshire), and Scarborough (Yorkshire). The ingredients are contained in the following proportion in 3xx.

	Cheltenham.	Leamington.	Scarborough.
Sulphate of magnesia,	17 grs. ...	2 grs.	66 grs.
Sulphate of soda,	14 grs. ...	32 grs.	} in all of the same salts.
Chloride of sodium,	51 grs. ...	67 grs.	
Chloride of magnesia,	7 grs. ...	12 grs.	

You will observe that the amount of solid ingredients in those waters is not great, and your remembrance of this fact will be

facilitated by stating that "the strongest is not half so strong as the German Friedrichshall, which again is only half that of Püllna."

The taste of our saline waters is not pleasant, and to disguise it they were formerly drunk with milk mixed with warm water. In comparison with those of Germany they may be deemed nauseous, and when drunk they often lie heavy on the stomach and give rise to flatulence or even pain. This is in all probability due to their deficiency in carbonic acid, in which their continental competitors abound. Besides, a considerable quantity must be taken before they act as cathartics of any potency, and hence, strictly speaking, they may be termed laxative alteratives instead of cathartics.

In addition to those Spas we have alluded to it may not be uninteresting to remark that many purging wells were long ago known in the neighbourhood of London, and that they were resorted to by the plethoric and ailing citizens. The most noted of these was located at Epsom or Elbesham, and in 1660 it was much frequented. The inn near it was considered the first establishment of the kind in England, and upwards of sixty carriages of the best blood of the country might be seen in the "ring" during the height of its popularity. Now "*Eheu Eheu fugaces anni*," its well is enclosed in a private garden, and notwithstanding the bracing air of the Epsom Downs, no valetudinarian ventures to the spot, and I daresay hundreds of people dwelling near are unaware of the existence of the well whence the name of Epsom salts is derived.

The reason of the disuse of Epsom and other wells of a similar character in the neighbourhood of London was probably due to the fact that younger and more popular rivals sprang up some distance from the metropolis, and by the beauty of their scenery and country attractions outrivalled more near and familiar friends. A few words may now be said about the peculiarities of the three typical saline springs we have mentioned.

CHELTENHAM

was noticed in 1715, and in subsequent years attracted many visitors. It is, and ever will be, an attractive city, for it is the centre of a well known hunting district, its schools are famous, and it possesses a mild and agreeable climate. Fifty years ago it was undoubtedly the most fashionable watering place in England, but in recent years it has not attracted so much attention.

There are different wells at Cheltenham, but all of them contain in varying proportions—

Sulphate of soda,
Sulphate of magnesia, and
Chloride of sodium.

One of these (No. 4 *a*) seems to be the reigning favourite, and it was termed an "ioduretted saline," because a small proportion of hydriodate of soda entered into its composition. There was an old saying—"He who respects No. 1 will not neglect No. 4." Every Anglo-Saxon whose skin was somewhat yellow by a prolonged tropical residence, at one time considered it essential to visit Cheltenham, and this desire was fostered by the idea that if he had been treated by mercury while in the East the Cheltenham waters would cleanse it from his system. Hence round the well at Cheltenham chiefly congregated rich nabobs, sugar planters, and others, who wished for the time, bile, and curry, and the recollection of slaves to be washed from their bodies. Much repute also was attached to the waters in dysentery, when it had assumed a chronic form. They were also greatly employed in obstinate constipation, old affections of the liver and spleen, and kidney derangements taking the form of gravel.

LEAMINGTON,

the centre of Warwickshire, and also, it is stated, the centre of England, was known to possess medicinal wells so far back as the year 1586, but it was not until 1811 they became well known. From that year to 1831 the progress of Leamington was rapid—more rapid than that of any other recognised spa in this country.

Two circumstances notably contributed to this.

1st. The Anglo-Saxon world was under the spell of the Waverley Novels, and when Scott wrote *Kenilworth*, and told of the knights and courtiers who had once held high revel there, and, with charming diction, pictured the country and the seats of their loves and their hates, all people who read the book, and who could afford it, visited Kenilworth, and so became familiar with Leamington, only a few miles distant. The visitor was amply repaid for his trouble, for no more truly typical picture of quiet English life could be seen than here, where the lazy Leam and the sluggish Avon slowly wind through green fields and fertile meadows, and intersect the rich pasture land on which reposes many a stately ancestral home.

2ndly. Dr. Jephson came to Leamington as a graduate from the University in the year 1830. He was a man of singular ability, determined character, wonderful insight, and courteous demeanour. He set himself to make Leamington great, and he accomplished his end. Not by vaporous words to medical journals—I do not suppose he ever wrote an article on any medical subject in his life; but he simply and successfully exercised the influence of strong convictions on those who visited Leamington. He became the most famous provincial physician of his day; nay, he even outstript his metropolitan compeers. His opinion was considered infallible, and men who believed in no one else, who literally and metaphorically threw physic to the dogs, trusted Jephson. And I do not wonder that this was so, for some years ago, when I had the privilege of meeting him, and when he was old and blind, he yet retained the impress of a strange dignity and insensible mastery over men. His stories were numerous, his criticisms keen. His wit sharp and trenchant, and his memory wondrously retentive. From many anecdotes he told us I select one as showing forcibly the character of the man.

A lady, apparently paralysed, was placed under his care. She was young, she was beautiful, she was wealthy, but, alas! she could not walk, and life and its pleasures were little more than a name. Art had been called to her relief, but though eminent physicians had seen and prescribed for her, their advice availed nothing; and, “hopelessly” paralysed, she had come from London to Leamington to see Jephson. He made a minute examination. He percussed the spine. He handled the palsied limbs, and then he prescribed some remedies, and said that he would visit daily for a week, which he did. One day thereafter he carried the young and interesting patient to his carriage, tenderly arranged the cushions, and asked the coachman to drive for three miles by the Kenilworth Road. Then he stopt the carriage, gently lifted out the patient, and sat down by her side, and talked of the scenery, the weather, and I know not what. A few dawdling minutes were thus pleasantly passed, when he rose, lifted his hat, and wished her good morning, expressing the hope that she would enjoy her walk back to town. In vain the lady screamed, questioned, and implored. The spot was lonely, and no help was near, and, under such circumstances, she rose and walked home, much to the astonishment and delight of her relatives and friends.

The springs of Leamington differ from those of Cheltenham

chiefly in this, that they contain little sulphate of magnesia, but a considerable quantity of the chloride of sodium. The waters are taken in a handsome pump room about 8 A.M., and it is recommended that after this a walk should be made by the side of the river and round by the garden, when the waters should again be taken. Jephson then stated that a walk, brisk and hurried, should be made homewards, in anticipation of the desired aperient operation. With this there is no pain, no griping, and no nausea, and breakfast is eaten with a keen appetite. The waters of Leamington are chiefly useful for bilious disorders, for digestive derangements, and stomach affections. They approach nearly those of Marienbad, in Bohemia, and would, with a careful dietary, assist greatly in reducing obesity and plethora.

CHALYBEATE SPAS.

We mean by these waters which contain iron, and are recognised as having this composition by their taste and other tests. The iron is generally in the form of a carbonate, sometimes in that of a sulphate, rarely, if at all, combined as a chloride.

Many waters in this country are strongly chalybeate, but the combination of chloride of sodium or sulphate of soda with iron destroys their virtue as chalybeates. On the continent there are many excellent chalybeates, notably Spa, Schwalbach, and Pyrmont, but at home we are restricted chiefly to one chalybeate,

TUNBRIDGE WELLS IN KENTSHIRE.

The temperature of the water here is 50° Fah. It contains one grain of the carbonate in twenty ounces, associated with a little carbonic acid. The water is clear, and the taste of iron is pronounced, but not disagreeably so.

In consonance with erroneous ideas on the subject it was formerly advised to take large quantities of the water. Thus patients were ordered to begin with thirty, forty, or fifty ounces, and to increase the quantity daily until a hundred, a hundred and fifty, and even two hundred ounces were taken, when the dose was gradually diminished. Now, in accordance with more correct physiological and therapeutical considerations, from half a pint to two pints in the day is justly deemed sufficient for the system to assimilate.

In olden times they were considered highly efficacious in stone and gravel, but their supposed virtues in these affections have in time disappeared. They are, however, of undoubted benefit in chlorosis or anæmia, and in conditions associated with a deficiency of iron in the system. Thus they are beneficial in assisting to convalescence from any acute or febrile disease, and these virtues are enhanced by the air, which is soft and genial and grateful to the invalid.

SULPHUR SPAS.

The best known sulphur water in this country is undoubtedly that of Harrogate in Yorkshire. The bogfield surrounding the town teems with sulphur, and is the certain natural manufactory for sulphurous preparations. Indeed, within a circle of half a mile from the Royal Spa no fewer than a hundred sulphur springs can be found. The old sulphur spring at Harrogate contains one hundred and twenty-seven grains solids in twenty ounces. These are chiefly chlorides, with 3·12 inches of carbonic acid gas and 1·4 of sulphuretted and carburetted hydrogen, the exact compositions being—

Chloride of sodium,	108	grains.
Sulphide of sodium,	1·9	„
Sulphuretted hydrogen,	3	„

The taste of the strong Harrogate sulphur waters is very disagreeable. Rotten eggs and gunpowder, bilge water, and brimstone, are epithets familiarly applied to it by visitors and tasters of the Spa. The action in large doses is purgative—in smaller doses it constitutes an excellent alterative.

Harrogate, although containing different ingredients, may be considered the Homburg of England, and is a favourite resort for wearied merchants and tired brain workers, who have reached the middle period of life. In such men we often find abdominal congestion, costiveness, hæmorrhoids, and apoplectic tendencies, and when such conditions exist, singly or combined, Harrogate waters are found to be valuable. Practically, also, though the mode of action is difficult to explain, the waters have always had a high reputation in various skin diseases, especially chronic eczema, prurigo, and lichen; and also in syphilitic eruptions, after a full course of mercury has been taken.

It may be added that Harrogate, in addition to its sulphur, contains also two chalybeate springs. The new spring has

sixty-two grains in twenty ounces—the ingredients being chiefly

Chloride of sodium.
 „ of magnesium.
 „ of potassium,
 „ of calcium,

with perchloride of iron, carbonic acid, and nitrogen.

The waters, chalybeate and sulphur, are taken at an early hour—from 7:30 to 9 A.M. The principal well stands in a large common some distance from the chief hotels, and the bracing walk over the breezy downs is keenly enjoyed in the morning air. Harrogate is really an invalid residence. People go there in search of health, not as to Scarborough in hope of enjoyment. Those who are not ill find Harrogate insufferably dull.

In Scotland the two chief sulphur wells are those of Strathpeffer and Moffat. The former can only be briefly alluded to. It is daily becoming more frequented, and lies amid wild and picturesque scenery, at the foot of Ben Wyvis, in Ross-shire. The two chief wells are strong sulphur springs. The upper contains eighteen grains of solid ingredients in twenty ounces, the constituents being chiefly sulphate of soda and lime, with $3\frac{1}{4}$ cubic inches of sulphuretted hydrogen. The lower has thirteen and a half grains in twenty ounces of the same salt, but with only $1\frac{1}{4}$ cubic inches of the gas.

The upper well is the strongest sulphur spa in Britain, and its action is strongly diuretic, and rather constipating. The usual quantity taken is three tumblers before breakfast, and as many more in the afternoon. After a short course the sulphur sensibly and visibly saturates the system, for the skin often comes off in scurf, as in the desquamation from scarlet fever; and when the underclothing is shaken over a fire, it burns with a blue flame, and the odour is unmistakably sulphurous. Chronic cases of sciatica, lumbago, and rheumatism here find great relief. Life at Strathpeffer would, for invalids, be greatly enhanced by some artistic decorations round the spas, and the presence of a lively and cheerful band. As it is, Strathpeffer presents to them simply the grimmer features of austere Scotch country life, the mid-day gossip on the arrival of the daily coach, and demure questionings as to the nationality and pedigree of fresh visitors.

After having thus spoken of the principal mineral wells of Great Britain, I can only briefly allude to a subject of vast and growing importance—viz., climatic health resorts, and

indicate generally the considerations which should induce you to make a selection of those for patients in the country or abroad.

It is generally with reference to phthisis that advice in regard to such places is desired. Apart altogether from theoretical considerations as to the nature and origin of tubercle, it may be stated broadly that phthisis has generally well marked, easily recognised features; and from these, as to the nature of the residence desiderated, much information can be obtained for a proper decision.

Thus, there is cough and expectoration; and the cough may be irritating and dry, or it may be accompanied by mucus or tinged with blood. There is fever, and the fever has characteristic and specific peculiarities. It is a fever, with an evening temperature higher than that of the morning, and the intensity and violence, nay, the prognosis of the malady, may be gauged better by the amount of fever present than by any deceptive acoustic signs. There are night perspirations, and this is Nature's effort to cool the heated frame. The tired labourer perspires after a hard day's physical toil, but this is the perspiration of health—the solatium of bodily fatigue. The perspirations of phthisis break the spell of the feverish state, but they give not, as in the former instance, renewed vigour and restored vitality. There is emaciation. The digestion fails, the fever weakens, the cough irritates, and the combination of these factors produces, as a natural consequence, thinness of the person and loss of weight.

These important characteristics exist in varying degree, but they can never be absent in any case of phthisis, and the practical question will be forced upon you, How am I to interpret these phenomena with reference to any individual case?

Judging from the present condition of the patient, you have to decide, Is the malady still increasing? Is it active or stationary? Am I to advise going abroad and residence in certain localities, and on what grounds? Naturally, you might say the temperature and the atmosphere would have much to do with the advice given. Does the temperature influence the tubercular process? Is a definite degree of heat advantageous or disadvantageous? The answer to these questions may be decided in the negative, for it has been found that the dry cold air of a clear winter's day is advantageous to most chronic diseases, and to this phthisis is no exception. Hence it was that climatic health resorts at a high altitude have been, in recent years, much vaunted in the treatment of phthisis, with the proviso that the fever is not high, the reaction is slow, the

functions of digestion and assimilation being notably impaired. When such conditions exist, residence in a high altitude may result in the cessation of fever, the abatement of the perspirations, and a return to health. It may be asked, Is there any danger? And the answer is, none of hastening the tubercular disintegration. This may be asserted, but there is a greater risk of a fatal attack of pleurisy or pneumonia than there would be if the patient was placed at a lower level.

The two principal climatic health resorts at a high altitude, are Falkenstein, in the neighbourhood of Frankfurt, and Davos Platz, in Switzerland. The position in Falkenstein is strengthened by the happy combination of a pine forest, with the bracing mountain air.

Falkenstein has the remains of a ruined castle. It stands 1,800 feet above the sea level. The ascent to it is steep and irregular, for it is placed on the summit of the mountain, and crags and woods prevent easy progress. A quaint old German legend tells how the natural difficulties still existing were at one time deemed sufficient to bar the course of true love, for a gay and gallant youth loved, it is told, the fair daughter of a stern chieftain, who in the olden time held the rugged fastness, and asked from him her hand in marriage. "You may marry her," said he, "when you ride from Cronbach here." The young man went away exceeding sorrowful, for a hopeless task had been placed before him, and he knew that he could never claim the fair damsel to whom he had plighted his troth. The big tear stood in his eye as he slowly paced down the forest, when, lo! a good fairy stood before him and asked him "the cause of his distress." To her he told his tale with all the force of impassioned and hopeless love. "At midnight," she replied, "mount your horse and I will lead you on." Faithful to the appointed hour he started, and step by step as he rode the fairy made a path by the aid of a golden wand she bore, and only left him as he thundered his impatient demand for admittance at the castle gate and claimed the maiden as his, since he had fulfilled the task set before him. The legend adds that he gained the bride he had so wondrously won, and from that time a way has been opened to the Falkenstein height.

In the case of Davos Platz, situated 4,805 feet above the sea level, the same conditions do not exist. The surroundings are these—a broad valley watered by lake and river, a windy summer, and a still, quiet winter air, when the country is covered with snow and the days are beautiful and clear. Thus, the winter is the time for Davos, and the sick can sit out

from 60 to 90 days in the open air, although the thermometer is at 4° Fah. in the mornings, or slight walking exercise can be indulged in with care and avoidance of fatigue.

These two, then, may be considered typical dry health resorts. Moist health resorts are characterised by an equable temperature, and they are best adapted for phthisis advancing more rapidly, and when there is a tendency to hæmorrhage and considerable fever. Such places improve the nutrition, give quiet sleep, moderate the fever, and not uncommonly arrest the hæmorrhage.

Madeira may be cited as a typical example of a moist health resort, for the summer is not hot and the average winter temperature is about 62·5° Fahr. It is alleged that cases of a marked hereditary taint of phthisis are least benefitted by a residence in Madeira, and if this statement is correct it must minimise the number of those who ought to visit it.

Pau entails a shorter journey from England, and possesses the advantage of a certain average temperature of 44·6° during the year.

Algiers also has a typical moist atmosphere, this moistness showing itself in plentiful deposits—abundant rain during the winter, and heavy dew in summer.

Nearer home we have excellent examples of the same class in Torquay, Penzance, Cool, Jersey, Rothesay (the mean temperature of which is 41·25° Fah.)

As intermediate health resorts between the dry and the moist stand Bournemouth, Hastings, Ventnor.

Drier health resorts at a low altitude are found at Cairo, Cannes, Hyères, Nice. At these places the air is clear and there are few rainy days; but it is to be remembered that the changes of temperature are very frequent, and the difference between sun and shade is often great.

CYST OF FIBULA (SEROUS)—EXCISION OF UPPER HALF OF FIBULA.

By GEORGE BUCHANAN,
Professor of Clinical Surgery, University of Glasgow.

REPORTED BY HOUSE SURGEON ANSTRUTHER DAVIDSON, M.B.

A. L., æt. 12, a healthy well developed country lad, was sent to consult Professor Buchanan concerning a large oval-shaped

tumour on the outer side of the right leg, extending downwards from the fibular articulation for about six inches, and measuring from its inner side to the middle of the leg behind, over its most prominent part, eight inches. On the inner side it was pretty well circumscribed; a slight furrow existed between it and the tibia, but behind its limits were lost in the sural muscles. It was immovably fixed, smooth and uniform in its outline, felt hard on palpation, with here and there a spot



which gave a semi-elastic sensation, with eggshell crackle, on firm pressure. The skin was freely movable over it, and showed very plainly the blue veins coursing over the tumour. No pain was felt on manipulation, or in walking, which was not in any way interfered with. The glands in the groin were unaffected. He gave the following account of its causation and history:— Twelve months ago he had fallen from a tree and bruised his right leg below the knee joint, the effects of which were soon

relieved by fomentations, but there was left a slight thickening of the tissues where the blow was struck. Shortly after he received another bruise on the same part by falling over a stone, causing it to become swollen and painful. Treatment by rest and fomentations relieved the pain and reduced somewhat the swelling, which after a little begun slowly to increase in spite of the counter irritation applied to discuss it. It went on increasing but slowly at first, then rapidly for a short period, and lately had been stationary, or not increasing to any appreciable extent.

4th February.—After a consultation, it was agreed, as the tumour was considered to be malignant, to amputate the limb through the knee-joint, and patient was put under chloroform; but Professor Buchanan, prior to doing this, cut down on the tumour on its outer side to make certain of its nature. Cutting through the skin, a bony shell was laid bare, through which, when the knife was plunged, a dark coloured serous fluid spurted out with considerable force. Passing the forefinger through the opening thus made, he found that the bone was expanded to a mere shell without any solid contents, and suspecting it to be a simple cyst, he prolonged the incision for nine inches on the outer side over the fibula. The tumour was then carefully dissected out, the shaft of the bone being divided by bone forceps one-and-a-half inches below the termination of the tumour. It was raised up and dissected from the structures behind, and disarticulated. The musculo-cutaneous nerve was so firmly adherent to the surface of the tumour as to necessitate its being separately dissected off, a procedure which led to its being isolated from all surrounding tissues for about four inches in its course. A vein and two small arteries were ligatured; a drainage tube was inserted, the wound being sutured over it, and dressed antiseptically.

1st April.—The wound had healed without any difficulty, and patient was now allowed to get up, but though he could bear the weight of his body on the affected limb, he could not walk on account of the loss of power over the extensor muscles of the foot, due no doubt to the injury to which the nerve was unavoidably exposed in the excision of the tumour. "Prickling" of the toes was complained of for six weeks after the operation, but this has slowly disappeared, leaving sensation normal.

8th April.—Dismissed cured.

Remarks.—Cystic tumours of the jaws are not uncommon, even serous cysts. But of bones of the extremities examples

must be very rare, as I cannot find any reference to such a case as that here recorded. The most careful microscopic examination failed to detect in the reddish fluid which escaped anything resembling structure, except some blood cells, and the membrane with which the cavity was lined was in all respects like a simple serous membrane.

The measurement of the tumour was $3\frac{1}{2}$ inches long and $2\frac{5}{8}$ inches in diameter; it was of a fusiform shape.

THE CASE OF CHARLES H. WARREN.

By GEORGE H. B. MACLEOD, Regius Professor of Surgery in the University of Glasgow; Surgeon in Ordinary to the Queen in Scotland.

A SHORT account of this man's case seems worthy of record, as, in some particulars, it is unique, and presents features which are very remarkable.

Having had an opportunity of carefully examining him, both in presence of my clinical class and many of my colleagues, and also in private, I have been much interested in the phenomena which he presented.

He is a native of New York, aged 34, and a strong, healthy, athletic man. He has been much spoken of in America by many of the leading surgeons, and he now proposes to visit the chief medical schools in this country. Bringing letters of recommendation from various members of the profession of high standing in the United States, who were satisfied of the genuineness of the demonstration which he gives, his case seemed to merit examination.

Warren professes to dislocate most of his joints at will, and to restore the bones to their proper relationship by a voluntary act, which, in most cases, consists in relaxing the muscular effort by which the displacement is produced. I may say at once that in no instance, except it be that of the hip joints (and that even is doubtful), is there, to my mind, any *complete* dislocation (*i. e.*, such a severance of the articulating surfaces as we find in traumatic cases); but there is, in many joints, a very curious separation of these surfaces to a considerable extent. Warren has been a professional acrobat and contortionist since early childhood, and he ascribes his present endowments to a congenital conformation of his joints. It is,

however, very questionable how far this idea is correct. as though an elongated condition of the ligaments has been described as occasionally present from birth, it seems more likely here to be produced by the long exercise of his calling. In support of his impression, however, of its being due to a congenital condition, Warren says that not only his father but two of his own children possessed the same facility. Early in life he declares that his hip joints "went out" and recovered themselves easily. However this may be, a period of 26 years (for he began his work at 8) of constant practice in stretching and twisting his joints could hardly fail to induce elongation of their white fibrous tissues, while his muscular system has been developed and toned to a remarkable degree by sustained gymnastic exercises. It is this combination of loose joints and strong muscles which is so curious in Warren's condition.

To all appearance he is a remarkably well knit athlete, with no spare fat or flesh, but every muscle firm and "fit" to the utmost degree. So much is this the case, that he has been much prized as a model in the "Life school." Persons are not wanting who, as a result of frequent dislocation of certain joints, have acquired the very unenviable power of displacing the bones by assuming certain postures, and there are many cases known in which one or more articulations could be dislocated without any previous traumatism. These persons, however, have been "loose fellows," shambling, weak limbed men, not athletes, strong and sinewy, with that elasticity and tone in every fibre which this man so abundantly showed he possessed when performing those remarkable feats of agility with which he concludes his demonstration.

Warren causes, without pain, a displacement of the articulating surfaces in the lower jaw, shoulder, wrist, fingers, hip, knee, and ankle. The scapula he throws out of place in a very curious way, but he cannot disturb either end of the clavicle, or the bones forming the elbow joint; and except in the case of the scapula, humeri, and femurs, he accomplishes it without apparent effort. However much he may contort his limbs, or however violently and suddenly he practises his acrobatic feats, no accidental displacement ever occurs in any of his joints.

Warren can slide forward either one or both sides of the lower jaw by the action of the external pterygoid muscles, and thus imitates very fairly the appearances in unilateral and bilateral dislocations of that bone. The condyles and inter-articular cartilages are seen to slide forwards on the articular

eminences and return again readily into the glenoid fossæ so soon as the muscular contraction which displaced them is relaxed.

The humerus (on either side) can be drawn downwards by the lower fibres of the latissimus dorsi and pectoralis major (which were felt very hard and tense) till the head of the bone could be easily distinguished on the under edge of the glenoid facet when the hand was placed in the axilla. Here, as in all other cases, the head passed quickly into its normal position whenever the muscular contraction was relieved. This downward direction was the only one which could be imparted to the bone, and when it was present a well marked pit or hollow appeared under the acromion. The expression of the ordinary sub-coracoid dislocation was thus very fairly shown, but the tension of the muscles round the joint detracted, to some extent, from its characteristic appearance.

The bones of the wrist, knee, and ankle could not be displaced without the application of the hand, and they only admitted of partial lateral dislocation, while the carpus could also be shifted both somewhat forwards and backwards.

There was no power of dislocating the extended knee, but when the joint was bent, and the foot held with the opposite hand, he could rotate the tibia easily so as to project the external condyle in front with a sharp click, and to such an extent as involved dislocation of the semilunar cartilage. The ankle joints were so loose that he could place the soles of his feet in apposition while the legs were kept together and parallel to one another; and he could project the upper surface of the astragalus to a remarkable extent in front of the tibia.

All the phalangeal joints of the hand, including the thumb, could be semi-dislocated, and his toes were remarkably supple. It was, however, in the movement which he was able to communicate to the heads of his femurs that the chief interest lay. By a sudden and considerable effort Warren seemed to throw the head of the thigh bone backwards on the dorsum, or into the sacro-sciatic foramen. The muscular exertion was evidently great, and could not be long sustained. It was not, I think, preceded by putting the limb or body into any special position, nor was it assisted by the application of the hands. He could effect this displacement, not only when the limb was free, but also with the foot on the ground, by moving the body over the leg. It could be effected also when he was lying down, but with considerable more difficulty. The displacement was the occasion of a loud sound at times, and the return was accom-

panied by a less distinct sound. The point of the trochanter passed about 2 inches behind or above Nelaton's line, and though it was almost impossible to measure accurately the amount of shortening in the limb from the short time that the deformity could be maintained, it appeared to be something over an inch.

The head of the bone could not be felt behind, but whether this was due to the contraction of the muscles lying over it, or because it sank into the sacro-sciatic foramen, I could not positively decide.

Professor Hamilton, of New York, who had carefully examined Warren, states that he had satisfied himself that a true dislocation on the dorsum did take place, and he rejects the other alternative which he suggests of the head of the bone slipping under the gluteus magnus.

When the displacement is present the deformity did not appear to me so great as in traumatic dislocation on the dorsum, nor is the trochanter so much turned forwards (though its prominence is decidedly diminished) or approximated to the anterior superior spinous process.

The limb is shortened, flexed, adducted, and rotated inwards, so that the foot rests on the dorsum of the foot on which he stands. It was impossible however, to determine with accuracy, in the usual way, the position of the head of the bone from the tense state of the muscles, and the difficulty he had in maintaining the attitude for any length of time. Whenever the muscles were relaxed the bone resumed its place with a snap. The bone could not be drawn upwards and backwards, and the true shortening produced, without the head leaving the socket. Yet, if the head of the bone really slipped completely out of its socket, and turned backwards, as it appears to do, it would imply a condition of the capsule sufficiently extraordinary, although, no doubt, situated on the back part where it is normally deficient, and it seems remarkable that there should be need for the sustained muscular contractions which were apparent, and that the bone should be restored so easily by merely relaxing these.

Again, if we suppose that the depth or formation of the acetabulum has been altered,—if its posterior lip has been diminished, and its capsular connections greatly lengthened,—how is it that the head of the bone never slips out without the man's will? His muscles, however well strung, cannot always be on the alert. It would certainly be a remarkable proof of the truth of the statement that "the muscles are the true ligaments of the articulations."

In traumatic dislocation the action of muscles is secondary or subsequent to the effect of the violence. The blow either drives the distal bone at once out of its relation to the proximal bone, or places it in such a position that the muscles act upon it at an advantage (either spasmodically or involuntarily), and complete the displacement. In Warren's case the displacements were, however, solely due to voluntary muscular contraction, in which one set of muscles was made to dominate or overmaster the others.

I have, on a previous occasion, examined a man who, after a traumatic dislocation of his right hip, could, at will, displace the head of the bone on the dorsum, but he had to apply his hand in order to replace it.

Perrin, in the *Transactions of the Surgical Society of France*, refers to 15 cases in which the head of the femur could be dislocated at will; and Dr. Hamilton, of New York, has mentioned cases recorded by Astley Cooper, Samuel Cooper, Lewis of North Carolina, Bigelow, and others. In one case reported by Dr. Forrest, of Portland, a farmer was examined who had been able to dislocate and replace the left femur since he was a boy. It was not the result of either injury or disease, and Dr. Hamilton has himself recorded a case in which, as regards one hip joint, it closely resembles the case of Warren. I have lately heard of an instance in which both hip joints could be thrown out at will, but I have been unable to obtain any accurate details. The patellæ and both ends of the clavicle have been known to undergo dislocation and be restored at the will of the patient; and many cases are on record, as I have said, in which a similar power existed over the femur, but in no case, that I have been able to discover, have so many joints yielded to the command of the individual as in that of Warren.

The muscular power of this man was also very curious. He can call, in a remarkable degree, one muscle or set of muscles into action without contracting others in the same limb. He made the muscles of the forearm stand out, while those of the upper arm were quiescent. The pectoralis major and minor, the serratus, the recti, were shown in a very striking way. By muscular contraction alone he elevated the ribs so as to increase the girth of the chest by $9\frac{1}{2}$ inches, and he was able to maintain this without in any way interfering with his respiration. He is said, in his exhibition in New York, to have allowed a stone of 250 lbs. to lie on his sternum, raised and fixed by the muscles, and have it broken by the blow of a sledge hammer. By compressing the abdominal parietes and

pushing the viscera upwards towards the chest, he could make the pulsations of the abdominal aorta visible.

The scapula he throws out of place in a very curious way. He has most power over the left, and he draws the lower angle backwards and upwards with amazing facility, bringing, too, the posterior borders of the bones into contact throughout nearly their whole extent. In these movements he showed how elastic and how much under his control was the latissimus dorsi which allowed of this, and yet bound the bone in its place at other times; while the powerful action of the trapezius, rhomboidei, and, above all, the levator anguli scapulæ was apparent in the displacements of the bone which he produced.

These and other evidences of command over special muscles or groups of muscles are very curious and interesting.

In connection with, and as a sequel to, these performances, Warren went through some very graceful and agile exercises illustrative of his strength and flexibility; and in so doing, he frequently placed himself in such attitudes as would have favoured the displacement of his joints if they had tended thereto without his consent.

An American newspaper, describing Warren's performance, speaks of him as "getting through the world on his elasticity," and calls his feats "india-rubber gum-elastic accomplishments," which phrases convey, in transatlantic language, some notion of this latter part of Warren's performance; but we were not favoured with the finale, which the same writer records, of his "retiring with his head under one arm and his stomach under the other."

ON A CASE OF TRIPLETS.

By GEORGE T. BEATSON, M.D. (Edin.), B.A. (Cantab.)

Case of Triplets.—On the morning of 15th October, 1881, I was called to see Mrs. M'C—, who was in her fifth pregnancy. Labour pains had commenced at 2 A.M., and I was summoned about 4.15. On my arrival at 4.45, I was told the pains had been for some time regular and strong. An examination per vaginam showed the os uteri fully dilated and the presentation to be cranial. As the membranes

were still entire, I ruptured them on the occurrence of the next pain, and in the course of a few moments a living male child was born. I was struck with its small size, and suspected I had to deal with a case of twins. After securing the cord I placed my hand on the abdomen, when I felt the uterus tense and hard, and but little diminished in size, thus rendering it clear that it was a case of plural births. A vaginal examination confirmed this view by revealing the presence of another bag of membranes, the presentation, however, being a footling one. On the return of the pains I ruptured the membranes and brought the child down by the feet, and delivered it without much difficulty, as it, too, was of small size. It was a living female child. I tied the cord, and then grasped the uterus with the object of facilitating the expulsion of the placenta, but I found that the uterus was still occupied by what could only be a third child. A vaginal examination showed this to be so, and that this third foetus was presenting, like the second one, by the feet, and was enclosed in a separate bag of its own. Being afraid of hæmorrhage, lest the placenta should be separate and come away before the birth of this third child, I determined to complete the delivery at once, so I ruptured the membranes and brought down the child by the feet, as before. It proved to be a living male child. Having secured the cord, and having ascertained that the uterus held nothing further than the after-birth, I hastened its expulsion by Credé's method, and at 5.25 it came away in one large mass. The uterus contracted firmly, but for safety's sake I gave a dose of ergot. The patient did not seem more exhausted than after an ordinary labour, and her pulse soon fell in frequency, remaining of good strength and character. The patient afterwards made a quick and excellent recovery, nothing occurring to mar the after progress of the case. The children, however, did not long survive their birth. Notwithstanding that every care was taken of them, and that they had all the signs of maturity, they soon all showed signs of embarrassed circulation, the hands and feet becoming cedematous and of a livid reddish-blue colour. All three died within twelve hours of their birth. Their bodies were examined after death by Dr. Newman, who reported that, with the exception of being slightly below the average size, they did not exhibit anything worthy of note.

In its main features the above case presented the characteristics common to the majority of plural births. One of the chief points of interest connected with it lay in the fact of

each foetus being enclosed in a separate bag of membranes. While this is the usual state of matters in twin cases, it is not so with triplets or quadruplets. Leishman, in his *System of Midwifery*, page 209, writing on this point, says :—"To judge from the few cases in which observations have been made, it would appear to be rare that each foetus, the number being more than two, is enclosed in its own complete sac. Several cases of triplets are, for example, recorded, in which one had a special sac, while the other two had a common amnion." The afterbirth, also, in this case was of interest. To all appearance it was single, but a careful examination of it, together with an injection of its vessels, showed that it was in reality a triple one. Dr. Newman kindly examined it for me, and the following is his report :—"The placenta is soft and spongy, and does not show any evidence of disease. It weighs 56 ounces, and when examined externally is seen to be divided into two portions, the smaller of which is round in form, with a maximum diameter of $6\frac{1}{2}$ inches, and a thickness of $\frac{3}{4}$ of an inch at its centre ; while the larger portion, which is distinctly separated from the smaller, is oval in form, and nearly twice the superficial measurement of the other part. The maternal surface of the placenta is irregularly lobulated, very brittle, but entire, with the exception of one lobule which has been torn off. The internal surface is smooth and normal in appearance. From the smaller portion one, and from the larger two, umbilical cords spring, and are surrounded by corresponding amniotic cavities, so that each child occupied a separate cavity. The large double portion of the placenta appears as if continuous ; but on the umbilical arteries being injected, it is seen to be divided by a sharp line into two distinct and almost equal parts."

As to the exact causes of plural births nothing very definite is known, beyond that the tendency to this great fertility seems to run in families, just as gout, cancer, and many other diseases are known to do. Thus, in the *British Medical Journal*, for 3rd February, 1877, we have the record of a case where, in nine years of married life there were triplets 8 times, and all of them girls. This is, however, even surpassed by a case given in the *Lancet*, vol. ii, 1871, where there were triplets thirteen times consecutively. In the present case it may be mentioned that Mrs. M'C. had been previously married, and had borne twins to her first husband, following it up with triplets to her present one. On enquiry I found that her grandmother, on the mother's side, was a twin.

Without going into a discussion of several interesting questions connected with the subject of plural births, such as the alleged sterility of the female in the twin births of males and females, or the theory put forward by Dr. Arthur Mitchell in his Morisonian Lectures on Insanity, that plural births are decidedly abnormal, and indicate imperfect development, it may not be out of place to mention briefly the general conclusions which have been arrived at by a study of a number of cases of triplet pregnancies:—

(1.) They vary with the fecundity of different nations. Thus, they are more numerous in Ireland and America than in England or on the Continent of Europe.

(2.) The causes are unknown. Primiparæ, however, are to multiparæ, as 1 to 8.

(3.) They seldom go to the full term of pregnancy, labour coming on from the 7th to the 8th month, though sometimes sooner, and rarely later.

(4.) Their diagnosis is very difficult, even at the beginning of labour, the only certain sign being the existence of three distinct cardiac pulsations. The exaggerated size of the abdomen, its bilobed condition, and the sensation of several simultaneous movements in different positions are not reliable.

(5.) The first stage of labour is usually very long.

(6.) The presentations are generally abnormal.

(7.) The interval between the birth of the children may vary from a few moments up to some days.

(8.) The placenta may be single, double, or triple.

(9.) The sexes of the children are usually mixed.

(10.) The mortality of the children in early childhood is very great.

(11.) Recovery is often tedious, and in these cases post partum hæmorrhage and subsequent metro-peritonitis are specially to be dreaded.

(12.) Owing to the slowness of the labour, and the abnormal presentations in these cases, instrumental interference is often more necessary.

CURRENT TOPICS.

PRIZE FOR ESSAY ON "THE RADICAL CURE OF CANCER."—
The following announcement explains itself:—

"The undersigned, who, in October last, was delegated to receive competing essays on the subject of the radical cure of malignant disease, announces that three essays were presented. In the consideration of their merits the assistance of DR. GEORGE B. SHATTUCK, Editor of the *Boston Medical and Surgical Journal*, was invoked; and it has been decided that none of the three essays is worthy of a prize.

"The same subject—namely, *The Probability of the Discovery of a Cure of Malignant Disease, and the Line of Study or Experimentation likely to bring such a Cure to light*, is proposed for essays to be presented in competition not later than the first day of December, eighteen hundred and eighty-three (1883), to the undersigned, who, with such assistance as he may select, will be the judge of their merits.

"For the best essay on the above subject a prize of ONE THOUSAND DOLLARS will be given, the right being reserved to withhold the prize in case no essay of sufficient merit be presented.

"The sum above mentioned has already been deposited in the New England Trust Company, of Boston, subject to the call of the judges.

"The essays must be legibly written in English, and neatly bound. Each one must bear a motto, and be accompanied by a sealed envelope bearing the same motto, and inclosing the name and address of the writer. They will all remain in possession of the donor of the prize for convenience of reference, and the privilege is claimed to publish the successful one, with the name of the writer. No writer, however, surrenders the privilege of retaining a copy of his essay, and publishing it.

"The decision concerning the merits of the essays will be made chiefly from a practical standpoint, it being the object of the donor of the prize to obtain suggestions by which a search for a cure for cancer may be instituted.

For the Donor,

J. COLLINS WARREN, M.D.,

58 Beacon St., Boston, Mass., U. S. A."

March, 1882.

REVIEWS.

On Diseases and Injuries of the Eye: A Course of Systematic and Clinical Lectures to Students and Medical Practitioners. By J. R. WOLFE, M.D., F.R.C.S.E., Senior Surgeon to the Glasgow Ophthalmic Institution, &c. With Ten Coloured Plates and 157 Wood Engravings. London: J. & A. Churchill. 1882.*

THE medical students and general practitioners of this country have certainly no reason to complain of any want of a manual on diseases of the eye adapted to their requirements. Several such works are already in the field, some of them of high merit. We can readily excuse Dr. Wolfe, therefore, for choosing a title that already figures on the back of one of the best known of these. It must be difficult to show originality.

The work now before us consists, as we are informed in the preface, of a *résumé* of courses of lectures, "so arranged as to form a complete practical treatise on diseases and injuries of the eye, . . . in which every effort has been made to embody the latest investigations." The aim is a high one, and our expectations are proportionately roused.

The author adopts the excellent plan of giving a short account of the normal anatomy and physiology of the structures before considering their pathological conditions. It may be doubted, however, whether the *comparative* anatomy of the eye has naturally a place in a work such as the present, when information has necessarily to be condensed as much as possible. But such facts, if they are to be given, ought to be given *correctly*, so as to be in accordance with "the latest investigations." Thus we are told that in the visual organ of the echinodermata "nothing is found but a nervous cord and a pigment spot." Yet, as long ago as 1876, Lange demonstrated that there is a distinct differentiated cell in connection with each nerve fibril in the eye of the *asteridea*. We are surprised to learn that the *tubelaria* (? *tubularia*) range in search of their food; did they do so they might possibly require the eye spots, "scattered about the head," provided for them by Dr. Wolfe. Perhaps the *turbellaria* are meant. Did

* The Editor considers it right to state that this work was placed by him in the hands of a perfectly independent Reviewer, who is far removed from Glasgow and its concerns. Having done so, he has felt compelled to accept the notice as written, however he may regret the unfavourable nature of it.

we wish to be captious, we might also find fault with the spelling of *dorsibrachiata* and *arachnidæ*.

Kölliker's account of the anatomy of the human retina was no doubt an excellent one in its time, but our knowledge has advanced considerably since then. Yet Dr. Wolfe makes no mention of the external limiting membrane nor of the fibres of Müller, while he describes the pigment-epithelium of the retina as belonging to the choroid. "These peculiarly shaped pigment cells," he says, "behave very curiously. *They seem to be migratory cells.*"* This observation is entirely original, though Kühne has described a migration of the pigment granules contained in these cells during exposure to light.

The effect of light on *erythropsine* or retinal purple constitutes, according to Dr. Wolfe, "the essence of perception of light and colour," and he eloquently describes how memory brings forth, when required, the "chromo-photographs" so produced. But how can our author reconcile this view with the well known fact that the retinal purple is only found in the outer segments of the *rods*, and is entirely absent from that part of the retina which has to do with central vision?

That accommodation is dependent on a compression of the rim of the lens by the circular part of the ciliary muscle is, we venture to think, not the view generally held and taught in this country.

The conjunctiva "consists of a dense layer of connective tissue, . . . with stratified epithelium, consisting of *slightly nucleated* cells on its surface." The conjunctiva oculi, again, is described as white. This is hardly correct. The secretory (*sic*) ducts of the lachrymal gland "penetrate the conjunctiva between the outer part of the upper eyelid and the ball." Where? The tears "are partly evaporated and partly sucked up by the upper and lower canaliculi, to be conveyed away into the *posterior nares* by the lachrymal ducts." *Oh, ye tears!*

The crystalline lens is described as a "*circular* transparent body," which is "placed behind the iris, in front of the vitreous body, *to which it adheres* by its posterior surface."

In his account of the vitreous body, Dr. Wolfe alludes to observations which, he thinks, tend to prove that this structure secretes the fluid of the aqueous chamber. Yet, why the generally received view, that the cells lining the inner surface of the ciliary regions are mainly instrumental in furnishing this secretion, should not satisfy the observers, it is difficult to understand. It will require not only many observations,

* The italics here and in other quotations will be understood to be ours.

but a decided change in the first principles of modern physiology before we can be induced to regard the vitreous as "a secreting organ."

The account of the general anatomy of the orbit is excellent, but it is a pity that immediately afterwards we are told that, in paralysis of the third nerve, the eyeball is "entirely under the control of the external rectus and *inferior oblique*." This is doubtless a mere oversight, but it constitutes a serious blemish in a work meant for students.

We cannot agree with the author when, in speaking of the examination of children, he says that hereditary syphilis may be an inheritance from parents or *grandparents*!

Dr. Wolfe uses atropine in conjunctivitis, even when there is no corneal mischief, because, he says, it has "an antiphlogistic effect on the inflamed surface," and, by dilating the pupil, relieves tension. Has atropine been proved to have this antiphlogistic effect? We know that sometimes it *increases* tension, while also dilating the pupil. Lastly, does the tension in conjunctivitis require relief? In most other respects the treatment described corresponds with that generally adopted.

In gonorrhoeal ophthalmia he recommends *warm* fomentations, and the application of a *weak* solution of lunar caustic to the everted eyelids, which is then washed off with solution of common salt. Commonly this affection is treated with *cold* applications, frequent cleansing, and *strong* nitrate of silver solutions, which are then washed off, but not necessarily neutralised. He adds, "I need hardly remind you that the prognosis is more serious when the urethral discharge is complicated with chancre." Is, then, urethritis itself more severe when so complicated? He does, indeed, well to remind us.

The leech has a zoological interest for Dr. Wolfe. But, alas! this is all; "I could never see its applicability to eye affections." Yet leeching is almost universally considered the most valuable means at our disposal for relieving the pain of acute iritis.

In catarrhal conjunctivitis, we are told, the temperature is not increased. Nettleship's clinical investigations on this subject show most definitely that it *is* increased. Speaking of the discharge in this affection, our author defines mucus as "*albumen* mixed with imperfectly formed epithelial cells." Catarrhal discharge, too, is "considered not contagious;" we were not aware of the fact.

The treatment recommended in granular conjunctivitis seems rather mild, but the results described are most satisfactory; it would be well, however, to mention *when* they may

be expected. Dr. Wolfe has "never seen any satisfactory result accruing from the use of argentum (*sic*) nitras or any other caustic." He has seen "patients rubbed with bluestone for eight or ten years until no trace of transparent cornea was left." It is almost a question whether it was not his duty to have stepped in and interfered in the interests of humanity!

Speaking of corneitis—which, by the way, may be caused by *carious teeth*!—Dr. Wolfe explains *photophobia*. The impression conveyed to the brain by the optic nerve is reflected through the oculo-motor nerve to the iris, and the pupil contracts. "At every contraction there is a *dragging sensation* communicated to the branches of the same nerve which supply the cornea, and hence there is a shrinking from light."

The most frequent causes of parenchymatous or *interstitial corneitis* are said to be "debility, bad nourishment, and scrofulous cachexia;" another cause is "uterine irritation." We are glad that he acknowledges the syphilitic taint occasionally, but it is not always marked by notched teeth, as he would lead us to suppose.

In keratoconus he says the cone is "situated generally in the centre of the cornea," the fact being that it is almost universally a little below this point.

We can find no mention of the comparatively common affection of the cornea called *keratitis punctata*. It is barely alluded to, but not described, under the head of serous iritis. The author observes that he has never seen a case of keratoglobus other than congenital, yet on the next page he gives a case of this affection that contradicts his statement.

His operation of corneal transplantation is described at great length. The results do not seem satisfactory.

In regard to the general symptoms of iritis, we learn that "when there is violent pain at the back of the head it shows the presence of irido-choroiditis." The term "condyloma" of the iris is a bad one, and should be discontinued. Under the heading "Functional Derangement of the Iris," Dr. Wolfe tells us that "dilatation of the pupil is caused by concussion of the brain;" this, without further explanation, is misleading. Idiopathic mydriasis may be "so complete that the iris is concealed behind the limbus conjunctivalis." The only explanation of such an extraordinary observation lies in the fact that no description whatever is given of irideremia. Comment is needless.

Immobility of the pupil to light is synonymous with

"abolition of tactile sensibility." "The operation for artificial pupil, if properly done, may even be practised on out-door patients." Very good practice too, we should think—for the surgeon. Before performing this operation in cases of occlusion from syphilitic iritis, "you should wait for more than a year, during which time mercury, alternated with potassium iodide, should be regularly administered, and *you should make sure that no trace of the virus remains in the system.*" During all this period, too, there must not be a trace of eye inflammation—not even hyperæmia of the conjunctiva. Does our author *ever* operate in these cases? He considers De Wecker's operation of iridotomy hazardous, but he does not seem to be aware that it was devised for, and is employed in quite another class of cases—viz., in so-called secondary cataract; when the pupil is drawn towards the cicatrix and occluded.

We can hardly agree with his account of sympathetic ophthalmia when he says that "generally very little pain or photophobia accompanies the affection, and the injured eye is blind before the disease is reflected to the other."

Lamellar or zonular cataract is said, at p. 132, to occur in children: at p. 166 we read, "This form of cataract is generally met with among adult persons." If all surgeons followed Dr. Wolfe's plan of treatment, the latter account might be approximately correct: he says, "the only operation applicable to it is the formation of a new pupil." The fact is, it is distinctly a cataract of early childhood, and on this account was called by Bowman *infantile cataract*: by many it is even considered to be *congenital*. It "generally occurs in both eyes at the same time, and remains absolutely stationary." In our experience it *always* occurs in both eyes, and frequently progresses slowly but steadily.

In pyramidal cataract "the *central portion* of the *opaque* lens is elevated like a pyramid, which is situated within the capsule." What a very curious condition it must be!

In describing the flap extraction he says, "the anterior hemisphere of the capsule is to be lacerated." Now, firstly, why not say "anterior capsule," as every one else does; and, secondly, why call that a hemisphere which is no hemisphere at all? The author's method of cataract extraction combines, the author thinks, "the advantages of all recent improvements without their risks." Is iridectomy *downwards* one of these improvements? The two main features of the operation are that he always does a preliminary iridectomy, and that a bridge of cornea is left undivided until after laceration of the

capsule. He orders "distance glasses about a month after extraction." This we think is decidedly too early.

Secondary cataract, in Dr. Wolfe's practice, forms *in front of the pupil*. This peculiar position may account for the startling direction which follows, that the membrane is to be "torn across in several places *without the needle disturbing the vitreous*"!

At p. 165 our author enunciates a new theory: "the lens itself may take on inflammation, and propagate it to the other structures." A few pages farther on we are told that, in as far as the lens has neither nerves nor blood-vessels, it cannot be subject to the inflammation which characterises other tissues. But Dr. Wolfe is equal to the occasion; "it is subject to a kind of vegetable inflammation, so well described by Sir James Paget." We must not conclude, of course, that Sir James Paget ever described such an inflammation in the lens;* our author only found the analogy useful in support of his theory. A case is recorded to show that violent inflammation may be set up by a foreign body in the lens, when the injury does not involve any other structure. In this case (p. 170) *the lens was extracted*, and some weeks later the eyeball enucleated on account of sympathetic ophthalmia in the other eye. *The foreign body was then found lying in the ciliary region*. Is this really a case—the only case—in support of the theory? It is well known, however, that after injury (such as needling) the lens swells up within its capsule, and may give rise to glaucomatous symptoms or to iritis. But is it good pathology to call such a swelling of lens *inflammation*? And does it not give rise to secondary symptoms merely by pressure upon neighbouring structures and interference with their nutrition?

The chapter on Refraction is one of the best in the book. But how can a burning taper be "placed in the centre of a spherical surface"? It is hardly correct to say that, according to the undulatory theory, light resembles sound, except

* At least we can find no such statement in the address to Brit. Med. Assoc., referred to by Dr. Wolfe. In Paget's *Surg. Path.*, 1870, p. 336, we read "that injuries of parts that have no vessels or nerves are followed by altered modes of nutrition, which are more or less exact *resemblances of inflammation*. Thus, *e.g.*, it is in the lens, vitreous humour, and the like after injury. . . . And, though with some fear of straining an analogy too far, I believe that we may gather *illustrations of the same principle* from the formation of gall-nuts." May not the starting point of the changes occurring in the lens, after injury, be the action of the aqueous humour (containing chloride of sodium) on the *globulin* of the lens? We offer this as a suggestion.

that the waves of light are shorter and their velocity greater. Speaking of refraction through a concave lens, he tells us that rays "entering the lens in lines diverging from a principal focus will emerge from it parallel to the axis." This cannot be the case, and judging from the context it is no mere slip of the pen.

In hypermetropia, Dr. Wolfe paralyses the accommodation with atropine, and then gives the strongest glasses with which the patient can see distinctly. It is usual to reduce this amount by 0.75 D in ordering glasses.

We have never seen *cyclitis* caused by tension of the accommodation.

He recommends myopes not to use their concave glasses for near work. This is not good treatment in high degrees of myopia, nor indeed in low degrees in young subjects.

His method of determining the amount of astigmatism is simply unintelligible. After having found the best spherical lens for distant vision, and having determined the meridians of greatest and least curvature, he continues:—"Then we place in the graduated frame . . . the cylindrical lens corresponding to the spherical one we have selected, so that the line making its *horizontal meridian* is at the zero of the scale, and then move the lens round in the frame, until all the lines of Snellen's fan appear equally distinct. We can then read off on the graduated circular frame the positions of maximum and minimum curvature."

The advantage of having discs with convex and concave lenses fitted to the ophthalmoscope is that it "can be used as an *optometer for trial lenses*."* Their real advantage is that they enable us to obtain a clearly defined erect image of the fundus in an ametropic eye; by their use, also, we can estimate the ametropia present. But, according to Dr. Wolfe, "the examination by this method does not yield a distinct and well defined image, since it is too large in proportion to the pupil, even at its maximum dilatation." If he will only bring his mirror closer to the patient's eye, however, our author will have every reason (after a little practice) to be satisfied both with the extent and definition of the field. "Two inches or less" is rather an indefinite examining distance; certainly anything beyond *one* inch is too great an interval. Again, it

* The ophthalmoscope, which is made for Dr. Wolfe, by Crétès, in Paris, does not apparently differ much from De Wecker's older instrument. We are told in a foot note (p. 221) that it is sold by Weiss & Son, London. On inquiry, we find that they have never had one in their possession, and have no recollection of ever having *heard* of the instrument.

is by no means "an essential condition for examination of the erect image that the accommodation of the eye, both of the examiner and of the patient, should be completely relaxed." Our disc of lenses enables us to neutralise any effect of accommodation that may be present.

After telling us of the occasional advantages of "clear sunlight" for focal illumination, he warns us against its use when the cornea is transparent or the deep structures diseased, "as it might cause some retinal mischief." He does not of course mean direct sunlight. Indirect sunlight, as the reflection from a cloud, is most useful and not more dangerous than artificial light: the reason we employ it so seldom is, that it is rarely obtainable in town practice.

Dr. Wolfe prefers the inverted image of the fundus. To direct the patient to look at your right ear, however, if his right eye be under examination, will not be successful in bringing the optic disc into view: the tip of the outstretched little finger of the right hand is a better fixation point.

It is wrong to describe the centre of the macula as "very prominent;" "conspicuous" is doubtless the word intended. We find no mention of keratotomy.

Paralysis of accommodation is surely rather a post-diphtheritic affection than one occurring "in diphtheritis of the fauces." The assertion that "both eyes are very rarely affected" must be new to most observers: it is usually described as a distinctly bilateral affection.

Cholesterin is said to occur in the vitreous in the form of "fine white globules, sparkling like mercury."

In acute inflammatory glaucoma, Dr. Wolfe tells us that on ophthalmoscopic examination, the optic nerve presents a cup-shaped excavation. Now, this cupping of the disc is characteristic of long continued tension, not of the acute condition. Again, even *were* the disc cupped in the acute stage, we should be unable to see it on account of the cloudiness of the media. Our author believes that the efficacy of iridectomy in glaucoma is due to neurotomy, "for Nélaton obtained satisfactory results in *tic douloureux* by removing a part of the diseased nerve." Were we told that cutting through the sensory nerves of the eyeball relieved *the pain* of acute glaucoma, we should certainly give *neurotomy* the credit of the relief, and Nélaton's success would afford a good parallel. We think that such an argument, however, may be pushed too far. That cystoid union of the sclerotic wound relieves intra-ocular tension is believed by many. Dr. Wolfe thinks it cannot do so, since "a cicatrix, instead of becoming more pliable, is, on the con-

trary, harder than the natural tissues." This depends upon the tissue and upon the circumstances. A cicatrix formed under increased intra-ocular pressure, in a fibrous structure so dense as is the sclerotic, may be both thinner and more readily permeable by fluids than the sclerotic itself. Our author is not an advocate for sclerotomy, but it is rather a sweeping statement to make that "no operation can be worth much that requires the help of drugs." This is because De Wecker recommends the use of eserine in such cases.

In his description of the operation of iridectomy downwards, the patient is ordered to look downwards. There is no mention made of the use of eserine in glaucoma.

It is surely tautology to tell us, in reference to a case under treatment, "blindness of the right eye was complete. Luminous perception was abolished." Indeed, in as far as the patient ultimately did well, the use of the word "abolished" here (p. 290), and in other similar cases, is open to question. Another case in which "vision was entirely abolished" recovered wonderfully after puncture of the sclerotic *in one eye*. "The remarkable feature was that the result was even more perfect" *in the other eye!* "This suggests the question—Did the effusion of this eye disappear spontaneously, or in consequence of the fluid being withdrawn from the other?" There is, we think, another question suggested—Did the vision return in either eye in consequence of the fluid being withdrawn, or spontaneously?

"Anæsthesia of the retina is a very marked feature in progressive retinal atrophy. This is manifest in various ways, according to the change it produces in a single optic band upon the middle part of the commissure, or upon a nervous cord in front of the commissure." What *does* this mean?

In describing nasal hemiopia, reference is made to a diagram illustrating Charcot's views (p. 297). The result of the lesion indicated will not have the effect described according to the diagram given—viz., that each eye, in fixing the arrow *ab*, will only see the part *cb*.

Dr. Wolfe is "inclined to regard retinitis pigmentosa as merely an exaggerated form of disseminated choroiditis." . . . "This view is the more reasonable when we consider the causation. In both cases the cause seems to be too close intermarriage. In the case represented in Chromo. Plate ix, fig. 1, there was hemeralopia. Patient was the issue of first cousins." We believe that no one but the author himself thinks that too close intermarriage is a cause of choroiditis disseminata. The chromo-lithograph referred to, which is described

as a case of choroiditis disseminata, is really a bad representation of retinitis pigmentosa. It is not the least like choroiditis disseminata. Is it possible that this mistake led our author astray? We again read that the hexagonal pigment cells "behave very curiously," and that "they seem to be migratory cells." Once more, too, we are told that the retinal pigment belongs to the choroid. A little more, perhaps, and we might be induced to believe it. The deposition of pigment in this form of retinitis generally takes place first at the equator in our experience, not in the periphery, and it is commonly associated with low, not with "strong" myopia.

Among the causes of amblyopia are mentioned constipation and coldness of the feet. It is a wonder that it is not more common! There is no mention made of the central *colour-scotoma* in tobacco amblyopia, although it is one of the most important diagnostic features in this affection. "According to Hutchinson, amaurosis may also occur in connection with carious teeth, even when the teeth are not painful." We cannot find this fact noted in that able observer's paper on affections of the teeth as affecting the nutrition of the eyeball.

Can a glioma become a glio-sarcoma in consequence of delay in operating?

Dr. Wolfe does not consider Holmgren's test for colour-blindness reliable. But he might describe more accurately how it *ought* to be applied. His knowledge of physics seems rather to be at fault when he tells us that the wave of medium length corresponds with the *green* of the solar spectrum: it really belongs distinctly to the yellow.

The account given of the application of the perimeter is good. It is not absolutely correct, however, to say that in retinitis pigmentosa *peripheral* vision is first lost. There is really first of all an annular scotoma corresponding to the equatorial deposition of pigment.

Speaking of one-sided partial paralysis of the third nerve, he says truly that, when the cornea is turned upwards, the false image appears below the real; but it is quite incorrect to add that, "when the cornea is turned downwards, the false image appears on a lower level." "The use of prismatic spectacles is particularly valuable in cases of paralysis of the fourth nerve"; he does not tell us why, and *when* they are to be used. He rightly advises prisms of equal strength before both eyes, instead of one before the deviating eye alone; but he ought to explain that each of these former ones should be of *one half* the strength of the single correcting prism.

His account of the operation for advancing the internal rectus

is most unsatisfactory. We are told nearly everything *except* the manner in which the tendon is to be advanced and secured. Among the symptoms of orbital cellulitis, no mention is made of the immobility of the eyeball. In periostitis or necrosis of any part of the orbital wall, we must find out whether the patient is healthy, or scrofulous, or syphilitic. "In the latter case the part must not be touched with an instrument." Why not?

Our author quite surpasses himself in his account of parasites on the lashes. "The ova of these usually give the lashes a *singed appearance*" (*sic*). "Put the *crusts* under the microscope and you will find them *alive, though in different degrees of development*." And then follows a hint for Pasteur; "they are the result of the disease of the lashes," and he thus accounts for their occurrence "among cleanly and well dressed persons." What is "tick of the face" with which, we are told, blepharospasm may be associated?

Dr. Wolfe does not seem to know what *epicanthus* is. He describes it as "an enlargement of the semilunar fold. . . . It may be temporary, and caused by erysipelas, purulent ophthalmia, &c. If congenital, a fold of the *enlarged conjunctiva* should be removed." This is nonsense. A good account is given of the operations for entropion and ectropion. Among the former, however, we should have liked to have seen a notice of Burow's excellent method. The credit of the operation for ectropion, described here as "the author's method," is due, according to a recent paper by Abadie, to Le Fort.

Throughout the volume the misprints and errors in spelling are very numerous. We find, *e. g.*, *pinguicula*, *installation* (of atropine), *synchesis*, *emulation* (for enucleation), *iridemia*, *concaved*, *anglioleucite* (for angeioleucitis), *steotoma*, *calosity*, *phemosis*, *dacro-cystitis*, *dacrolythes*, *douch*, *porte-caustic*, and a host of others. Again, a minute is defined as the *sixteenth* part of a degree; a *concave* lens is used for focal illumination instead of a convex; *divergent* squint is said to be induced by hypermetropia, when convergent is evidently meant; and so on. The following authorities are, we believe, new to medical literature:—Abadi, Makenzie, Wardsworth, Grenhagen, Forster, Basdow, and Traumer.

The author's style is generally clear and his terms well chosen. We must, however, take exception to such expressions as *ichory* and *exteriorate*. The following have too foreign a look about them to please us in an English work:—*Phlyctena*, *buphthalmia*, *sympathia*, *hæmatopia*. Sympathetic inflammation does not "set up" through a foreign body; it

may be set up by such an accident to the other eye. It is hardly right to say that the *tout ensemble* of the symptoms of glaucoma tends to blindness. The "study of the field of vision . . . materially fills up the *lacunæ* left by the ophthalmoscope;" "gaps" is a shorter word, and would be more elegant. Why were the parents mentioned at p. 307 "recommended to *lay aside all delicacy* and put the child under my care?" Surely this is a peculiar expression.

The author's Latin is execrable: *e. g.*, *antrum maxillaris, unguentum flava, rectus inferioris, corpus quadrigeminus*, and his prescriptions generally. It is unusual, too, to mix up bad (or even good) Latin and English in the same sentence, as our author is so fond of doing: *e. g.*, "constitutional treatment is most to be relied on—iod. potassium, syrup, iod. ferri, and pil. hydr. c. quinine;" "a plate of glass rendered sensitive to the rays of light by being covered with argenti nitras and gelatine;" "the infusion of anthemidis nobilis or collyrium sulphatis zinci is sufficient;" "a pencil dipped in solution argent. nitratis. grs. v to ʒi;" "after the administration of pil. hydr. c. colocynthidis, order ol. terebinth., . . . in syrupi aurantii . . . Then order pil. hydr. c. quiniæ."

"The chromo-lithographic illustrations," to quote from the preface, "have been *painted for this work* by my excellent and esteemed friend, Dr. Hugo Magnus." There are *twenty* chromo-lithographs here in all, and we find *eleven* of them in Magnus's Atlas, published several years ago! Two of these are here represented upside down (pl. iii, fig. 4, and pl. vii, fig. 1) and are consequently rather difficult to recognise at first. Another (pl. x, fig. 2) appeared in a monograph by Magnus, making in all *twelve* that have been already published. Of the remaining eight, *two* (pl. ii, fig. 2, and pl. iii, fig. 2) appear in Jæger's Atlas, and are here *reproduced without any acknowledgment*. The remaining *six* possibly appear now for the first time: one of them (pl. ix, fig. 1) looks original.

We at once recognise many of the woodcuts as old friends: the source of some of them is acknowledged. Others are quite new to us. Figures 15 and 31 are two of the worst and most misleading we have seen for a long time; the latter is said to be from a case of *keratoglobus*, but instead of the anterior chamber being deep, it is absent altogether, and the iris is evidently lying against the cornea. Part of fig. 153 is wanting. We would draw special attention to fig. 61, representing a minute foreign body; the only possible end served by such a thing is, we suppose, to add one to the total number of woodcuts.

The publishers have done their work particularly well, and to them the volume is really most creditable: to Dr. Wolfe it *may*, or it may not, be a credit; to British ophthalmology it is certainly none.

Diseases of Women. By ARTHUR W. EDIS, M.D., F.R.C.P., M.R.C.S. Smith, Elder & Co. London, 1881. Pp. 541.

THIS book opens with an introductory chapter on what is to be observed and done generally in the examination of a woman presenting herself for treatment. In regard to the somewhat difficult question as to what symptoms render a vaginal examination necessary, very sensible remarks are made. Where *amenorrhœa* is the chief point in the case, no examination is requisite unless a distinct molimen is present. On the other hand, where *menorrhagia* persists, and is not influenced by ordinary remedies, but produces marked anæmia, debility, and impairment of the general health, an examination should always be resorted to even whilst the hæmorrhage continues, more especially if the loss be excessive, for a polypus, fibroid tumour, or cancer may be present.

In cases of *dysmenorrhœa* the question of resorting to examination is often a very perplexing one. After the usual recognised means have been tried, on the supposition of its being neuralgic or congestive, and where the discomfort is so great as to unfit the patient for her ordinary duties, or her general health suffers materially from the frequently recurring paroxysm of pain, an examination with the view of detecting any flexion or obstruction is clearly indicated, and should be resorted to.

In cases of *leucorrhœa* in single women, it is well to try first what influence iron and aloes, with some astringent injection, or sea-bathing, will produce; but should the general health suffer, more especially where there is any phthisical history, and the discharge continues excessive, spite of all our remedies, an examination should be made.

Where patients complain of *bearing down*, dragging pain in the hips and loins, pressure upon the bladder, causing retention of urine or frequency of micturition, and there is no habitual constipation to explain the symptoms, or these persist after the former has been remedied, an examination had better be instituted. (P. 5.)

The chapter on physical diagnosis is very good. It is short, and yet both comprehensive and precise, and contains all that a student ought to know.

In speaking of displacement of the uterus the author deals with the opposition to the use of pessaries still kept up by certain practitioners. "Objections have been raised to their employment on the plea that they are unscientific, that their usefulness is only palliative and temporary. Whatever objections, however, may be urged, there is little doubt that they offer a valuable method of relief for a large number of cases of prolapsus, as well as for other forms of displacement. It will generally be found that those who are most opposed to their employment have seldom, if ever, tried them, or only so rarely that they have never acquired the requisite experience to ensure a successful result. The practical advantage, however, that is gained far outweighs any amount of theory. Even granted that the usefulness of pessaries is only palliative and temporary, that is no reason why we should discard them. As well might we object to the application of splints to a fractured limb, or of a truss to a hernia, or of any orthopædic instrument for the cure of deformity." (Pp. 52, 53.)

This section contains a great deal of information, given so particularly as to be of great use even to those who have had little or no practical experience in uterine manipulation. The following graphic description of the symptoms of retroflexion is given:—"Localised pain in the sacral region is generally present, increased on defæcation, and also by standing or walking. Just preceding the menstrual flow, the pain is often spoken of as agonising and almost unbearable, extending down the thighs, radiating to the groins, and producing considerable malaise. The pain in the lower part of the spine is sometimes so intense and persistent as to lead to the idea that spinal disease exists. Tenderness on pressure on one fixed spot, a sense of numbness or want of power, especially of inability to walk, and even in extreme cases paraplegia, all tend to confirm the supposition that spinal disease is present. In former years many patients were confined to bed or the couch, made to recline on bare boards, cupped, blistered, and otherwise actively treated for supposed spinal complaints, due in reality to symptomatic disturbance from a retroflexed uterus." (P. 93.)

The evil effects of congestion of the uterus and its appendages is well put in the following paragraph:—"Uterine congestion complicates, or plays an important part, in a large proportion of cases of uterine disease. It constitutes one of the most serious obstacles to their cure. It tends by its very conditions to perpetuate itself. It exhibits little or no tendency towards spontaneous recovery. The organ in which it

occurs is rendered permanently larger, its tissues are infiltrated with serum or semiplastic extravasations, its contractile force and the tonicity of its vessels are impaired; the blood brought to the uterus either by the ordinary distribution or by intermittent flexions is delayed; a kind of hæmostasis is induced; and these conditions are aggravated by time, by the increasing mechanical impediment to the cause of the pelvic circulation, which displacement of the uterus in relation to the broad ligament induces." (P. 115.)

In dealing with the subject of local depletion of the uterus, the author expresses himself strongly in favour of puncture or scarification. With regard to leeching he makes the following remarks, which, we think, the experience of most practitioners will confirm. "Regarded from a practical point of view, the application of leeches to the cervix uteri is not only unsatisfactory, tedious, and troublesome, but also very uncertain in its results. Occasionally, they cause severe pain, amounting to agony, especially if one crawls into the uterine cavity and attaches itself there. Urticaria not unfrequently results. Sometimes it is difficult to get them to bite, at others to arrest the bleeding, and the quantity abstracted is always uncertain. If their application be entrusted to a nurse, considerable inconvenience may be caused by the prolonged unscientific attempts to get the cervix into the field of the speculum, and more harm done to a tender, inflamed uterus than any good likely to be derived from the depletion. For these reasons I very rarely employ them now, but resort to puncture in preference as being more certain, less troublesome, and much safer." (P. 119.)

If a score of general practitioners were to be asked to state what they knew of the pathology, causation, and treatment of chronic cervical endometritis, *alias* "ulceration of the womb," there would be even more than the proverbial "difference of opinion" brought out in the answers. Dr. Edis treats the subject in a very clear manner, and his remarks on the symptoms and prognosis are well worth quoting. "Owing to the slight amount of sensibility possessed by the cervix, inflammation may be present without attracting the patient's attention; even the presence of abundant leucorrhœal discharge may pass unnoticed, although on examination with the speculum the canal of the cervix is found to be filled with a glairy, viscid, mucous secretion.

"This leucorrhœa is often the first symptom leading the patient to believe anything is amiss. She then begins to experience dragging sensations about the pelvis, bearing down and pain in the back, aggravated on standing or walking, and

generally worse towards the menstrual periods, which latter become altered in character, often painful and irregular as to frequency and quantity. The discharge is at first of the nature of boiled starch, thick, viscid, albuminous. If villous erosion complicates the cervical endometritis, the discharge is more muco-purulent, tinged with blood, acrid in character, producing considerable irritation in the vagina and vulva, and even setting up inflammation.

"As the disease becomes established, constitutional symptoms become more marked. The nutrition becomes impaired owing to diminished appetite and enfeebled digestion; nausea and vomiting are not infrequent. The patient becomes nervous and hysterical, despondent and fretful; complains of vertical headache, intercostal neuralgia, and other anomalous aches and pains. The abdomen is often distended, the bowels confined, the urine turbid, micturition painful and difficult, the bladder irritable from pressure where hyperplasia, with ante- or retro-version exists, cystitis itself being not infrequent.

"Where hyperplasia of the cervix complicates endometritis, there is often dull, aching pain complained of on sexual intercourse, and hæmorrhage as well, if any villous erosion be present." (P. 130.)

"Cervical endometritis, as a rule, shows little tendency to spontaneous cure; it is a most obstinate disorder, and if unchecked often induces hyperplasia, with consequent displacement and other troubles. The less viscid and less in quantity the mucous discharge, the more favourable is the prognosis. Where, however, the granular disease is slight, and the amount of thick tenacious mucus blocking up the cervical canal considerable, the prognosis is much less hopeful. Destruction of the diseased glands by some radical method here offers the only hope of relief. Treatment is at all times very tedious, and relapses are very liable to recur." (P. 131.)

In the treatment of this affection he recommends the usual tonics, with carbolic acid and iodine applied locally by means of Playfair's probe. Fuming nitric acid he advises only when all ordinary means have failed, and speaks of severe pain and occlusion of the os uteri as having resulted from its use. We believe that there is no more safe and certainly no more effectual application to the cervix than this agent, but that the cotton wool must be almost dry, so that the diseased tissue alone is brought into contact with the acid, which, indeed, acts only very superficially. Due care must, of course, be taken to prevent injury to the vaginal walls. In speaking of villous endometritis, the author condemns the use of the steel curette

of Recamier, and commends the copper one of Thomas of New York. The objection to the steel instrument is its strength and consequently the power exercised by one who wields it of doing severe injury to the uterus. The copper instrument bends when much force is applied. We believe this theory to be bad. A powerful instrument, delicately used, is safer than one where force has to supplement what the instrument lacks in stability. The recent experiences of Martin of Berlin, and others, have proved how safe and efficient the steel curette is, when in the hands of a careful and dexterous operator.

In the chapter on Laceration of the Cervix Uteri the author gives his adherence to the theory advanced by Emmet, Thomas, and other American authorities, that this injury is the cause of severe and continued ill health, and even of epithelioma of the irritable cervix. The operation for repairing the cervix is strongly recommended:—"An attack of cellulitis or peritonitis may follow the operation; but considering the good which it accomplishes, it is remarkably free from risk, and when performed with care is perhaps the most successful one in uterine surgery." (P. 185.)

In cases of hystero-epilepsy and epileptiform mania, where the fault can be traced to the ovaries, Battley's operation is advised.

The preface states that "the diagnosis of abdominal tumours, being generally one of much difficulty to the student, has been given most exhaustively." (P. vi.) The differential diagnosis is indeed very fully entered upon, occupying no less than twenty-two pages. It is so full as to be somewhat confusing.

For the performance of ovariectomy, the author recommends the use of bichloride of methylene as being much safer and more effective than chloroform or ether; with the latter, he says, there is difficulty in inducing complete anæsthesia. This must be due to some fault in its administration, for we, in Scotland, so far as our knowledge goes, seldom have any difficulty, if care be taken, in excluding air until the patient becomes insensible.

The sections treating of the functional disorders of the sexual organs are very carefully written. These include vicarious menstruation, sterility, vaginismus, and other forms of dyspareunia.

The diseases of women, more than many affections of the body, are not easily learned from books. As a recent writer truly enough remarks, "it is much less difficult to learn (from reading how) to pass a catheter into the male bladder, than a

sound into the uterus. Still, a practitioner who is in the unfortunate position of being obliged to begin learning from experience in his own practice, will find much to help him in Dr. Edis' manual, and will by it be prevented from inflicting unnecessary pain on his patients.

The faults one can find with the volume are few. It is here and there, as in the chapter on Extra-Uterine Foetation, very evidently an abstract of some well known monograph; but this the author does not attempt to conceal or deny. There are 148 woodcuts, some of them merely diagrammatic, but all good for the purpose in view. In Fig. 34 the pessary is too small in proportion to the pelvis, and Fig. 86 is turned upside down so as to be somewhat confusing to the reader.

We think the book is what it professes to be, a safe and practical guide to the "pathology, causation, symptoms, diagnosis, and treatment of the diseases of women," and as such we cordially commend it to the profession.

A Practical Treatise on Diseases of the Skin. By LOUIS A. DUHRING, M.D. Second Edition. Philadelphia: J. B. Lippincott & Co. 1881.

THIS is the second edition of a work which was originally published only five years ago, and which has, from its first appearance, been regarded as the best book yet produced in America on the general subject of skin diseases. Its simplicity of arrangement, decidedly practical character, and the fact that it is tolerably exhaustive without being unwieldy, have secured for it a very hearty appreciation on the other side of the Atlantic; and though it aims chiefly at the description of cutaneous affections as they occur in America, there seems to be no reason why it should not stand as high in the estimation of the profession in this country. The author, indeed, insists on "the fact that diseases of the skin manifest more or less variation in type as they occur in one or another part of the world;" but he subsequently remarks that "the diseases met with here resemble more closely those of Great Britain than those of either France or Germany;" and the British reader will, on the whole, agree with him, very few discrepancies in description being discoverable. Amongst these there is one which is worthy of notice,—the statement that *lupus vulgaris* is more amenable to constitutional treatment in America than elsewhere, while in Austria, for instance, it defies such remedies.

This edition is considerably larger than the former one, and contains new articles on uridrosis, phosphorescent sweat, and fourteen other affections, most of which are distinguished by extremely formidable names.

To the general consideration of anatomy and physiology, symptomatology, etiology, pathology, diagnosis, treatment, prognosis, and classification the first hundred pages are devoted, leaving about 550 pages for the discussion of special diseases. The classification adopted is a modification of Hebra's, which rests on anatomical and pathological grounds, except in the case of the class *parasitæ*, which is etiological. It is noteworthy that the author includes only hyperæsthesia, dermatalgia, pruritus, and anæsthesia in the class *Neuroses*, excluding zoster and some other affections considered to be of this nature by many writers. In the body of the work the discussion of special cutaneous diseases is marked by a characteristically practical bent, seen more especially in the paragraphs on treatment, in which the latest advances in cutaneous therapeutics are noticed, and their value indicated. The author's remarks on the administration of arsenic in skin diseases are good and sound: "To say that arsenic is of use in 'diseases of the skin,' viewed collectively, is an assertion so vague and meaningless as to be of no practical value. Not only is it necessary to specify the disease, but also the very stage of the affection, if we would employ it successfully." Arsenic influences chiefly the mucous layer of the epidermis; hence it is found most beneficial in diseases of the more superficial parts of the skin, but of little avail in affections of the deeper structures. Its action is often slow. "It should not be given in the acute inflammatory stage of any disease of the skin; it should never be prescribed when there is great heat, intense itching, or rapid cell change." Its unquestionable value in psoriasis, in certain varieties of eczema (in the papular and squamous forms, and "in those cases in which the true primary lesions are but ill defined, and where there is but slight infiltration of the skin"), in pemphigus, in lichen ruber, and in certain forms of acne, is then indicated.

The dysidrosis of Fox, and the cheiro-pompholyx or pompholyx of Hutchinson and Robinson, are here regarded as separate and distinct diseases, the former due to some disturbance of the sweat apparatus, the latter not connected in any way with the sweat glands, but rather of a character demanding further study before its true nature can be determined.

As regards prurigo "the author differs in his ideas from the majority of English and American writers," and adopts and

follows closely the views put forth by German dermatologists as a whole, ascribing the confusion which certainly prevails in literature concerning this disease to the circumstance that three very different affections have been confounded with each other, namely, prurigo, pruritus, and pediculosis. He considers the first named disease a marked and clearly separable one, "extremely rare and almost unknown in the United States, only occasionally encountered in France and England, but common in Austria, where it may be said to have its home." He distinguishes it from pruritus by the following features: the facts that its papules are *primary*, and the blood crusts on their summits are extremely numerous; a remarkable thickening and harshness of the skin which are characteristic of it; the parts affected—the extremities, and more especially their extensor surfaces; its more intense and constant itching; its continuance throughout life; and its predilection for the poorly nourished and ill fed. With pediculosis the disease, with ordinary caution, should not be confounded, the presence of pediculi and the comparative rarity of papules being sufficiently distinctive of that affection. The author, holding these views, protests very properly against the habit into which some have fallen, of using these three terms interchangeably.

In a work such as this, in which the whole field of cutaneous diseases is traversed, points of great interest turn up on almost every page. For instance, we find the author rejecting, and very justly we believe, the parasitic theory of causation of alopecia areata, and throwing considerable doubt over the view that molluscum sebaceum is a contagious affection. He inclines to the belief that pellagra, so much dreaded in Italy, "is produced by the use of diseased (ergoted) maize, which the inhabitants of the pellagrous districts consume in large quantities as an article of food." The distinctive features of the parasitic and the non-parasitic varieties of sycosis are here also very well put. An interesting though necessarily brief account of various forms of skin eruptions caused by the internal and external use of drugs, is given under the term *dermatitis medicamentosa*.

We notice, as an omission, that scarcely enough of attention is bestowed on vaccination as a probable cause of certain skin eruptions. It is stated generally that "in addition to the local disturbance which the process occasions, it is now and then followed by peculiar erythematous and pustular affections; they occur, however, only rarely, and are usually benign in their nature." It is also admitted that some relationship occasionally exists between contagious impetigo and vaccina-

tion, and reference is made to some "fungoid bodies" which Dr. Piffard found both in impetigo contagiosa and in vaccination crusts. But nothing is said of generalized vaccinia or of the vaccinia gangrænosa of which we have heard so much from Mr. Hutchinson; nor is there here any account of the special features of those rashes which occasionally accompany vaccinia and are generally admitted to be of the nature of a specific eruption, due to the presence of the vaccinia poison in the blood. These eruptions are met with not uncommonly, and have lately received considerable attention from Kalischer, Behrend, Thin, Hutchinson, and others.

On the whole, this work may be said to be well abreast of the most recent advances in dermatological science. We commend it as one of the best available guides to the study of skin diseases. If read in conjunction with the author's *Atlas* its value will be much enhanced. It is well written, and its diction is less obtrusively American than is the case in many of the works with which our "kin beyond sea" favour us. It is further exceedingly well printed and bound.

A Practical Treatise on Hernia. By JOSEPH H. WARREN, M.D. Second and Revised Edition. Boston: James R. Osgood & Company. 1882.

THE frequency of hernia, the dangers and the annoyance to which the infirmity gives rise, and the difficulty of obtaining an efficient, as well as a comfortable truss, have all tended to direct the attention of surgeons to this department of their profession, with the view of devising some means of so curing the ailment as to do away with the necessity for any retentive apparatus. The above mentioned work is another contribution to the already extensive literature on the subject. It is from the pen of Dr. Joseph H. Warren, of Boston, and is evidently written by one who has had considerable experience in the class of cases of which he treats. In the preface to the first edition the author tells us that the work was published "to give a short sketch of the various operations for the cure of hernia that are most worthy of mention, in order that the busy practitioner could refer to them without wading through whole volumes." This scarcely gives a correct description of the book, for as it appears in the second edition which it has now reached, it must rather be regarded as a monograph of a very comprehensive and practical kind. Thus we have

chapters on the causation of hernia, on the different varieties, and the frequency of that affection, with concise but clear descriptions of the anatomy of the parts concerned. Undoubtedly, however, the chapters of the book round which the chief interest centres, are those in which the author advocates his method for the permanent cure of rupture. He first passes in review all the older plans of treatment, such as compression, cauterisation, incision, excision, ligature, suture, and acupuncture, and points out their dangers and disadvantages. He then describes fully his own method, to which, he says, "I make no claim to originality beyond whatever originality is required to perfect and bring to a scientific development what before, in a crude and imperfect form, had worked many good results." He evidently here refers to the labours of Dr. Heaton, who was the first to inject the hernial rings with fluid extract of oak bark, and to do so hypodermically. This is essentially what Dr. Warren does, but he claims to have devised better instruments and a more perfect injecting fluid. The former are furnished with needles of different sizes, which are flattish, oval in section, and twisted throughout their entire length. The *modus operandi* varies of course with the variety of hernia requiring operation, but in all cases the steps of the operation are the same. Taking a case of inguinal hernia they consist in reducing the hernia completely, then introducing one of the twisted hypodermic needles, and injecting some of the oak bark fluid at the internal and external rings as well as along the canal. As a consequence of this procedure a certain amount of inflammatory action with effusion of plastic lymph is set up, leading, under proper precautions, to the obliteration of the passage down which the hernia passed. With the view of ensuring success in this matter it is advisable to be careful in the after treatment of the case. Thus, the patient should for some days be confined to bed, lying on his back. The bowels should be kept confined, the diet should be unstimulating, and on rising the parts should be supported by a truss or pad and bandage, all coughing or straining being avoided. If these instructions are followed out, the parts become agglutinated, and a successful issue is the result. Such, briefly, is the plan of radical cure which Dr. Warren advocates, and he bases his good opinion of the operation on the grounds of its safety, its simplicity, and the certainty of success which follows it, if it is only properly carried out. In chapter vii, he offers some general remarks on the selection of patients, the kinds of hernia best treated, the percentage of cure, and the causes of failure.

A treatise such as the present opens up the oft discussed question as to the advisability of attempting any of these so-called radical cures for hernia. No doubt those that have been devised more recently have been attended with less risk to life; but experience has shown that where they have failed is in the permanency of their cure; cases that have promised well at first, and have shown the parts firmly agglutinated and strong, have eventually become the seat of a fresh protrusion, the consolidated mass that filled the canal having dwindled away. Accordingly, we find that, as a rule, all of these radical cures have to be assisted by the use of a truss if they are to be successful, and under these circumstances it seems unwise to subject patients to the risks and inconveniences of an operation which will not free them from wearing some retentive apparatus. Should, however, any case arise in which operative interference was deemed advisable, or urgently sought by the patient, after our perusal of Dr. Warren's book, we would be inclined to give his method a trial before adopting the more formidable plan of Mr. Wood, where the canal is constricted by re-uniting its separated edges.

In conclusion, we may say that, besides treating at great length and in full detail of the operation which he specially advocates, Dr. Warren has furnished in his treatise a great deal of general and important information on the subject of hernia, and has striven to make this edition of his work more valuable than before by adding several new chapters on the causation of hernia and other points. The book is well illustrated, and contains some beautifully executed anatomical plates, as well as a very complete bibliography of the literature of hernia, so that it should be very acceptable to the profession as a "thoroughly comprehensive and practical text-book on Hernia."

Monatshefte für Praktische Dermatologie. Band I, No. 1.
März, 1882. Hamburg: Leopold Voss.

WE have been favoured with this, the opening number of a new German periodical devoted to dermatology and syphilis. Its editors are Drs. H. v. Hebra, O. Lassar, and P. G. Unna, all well known names; and with them are associated some sixty-nine *mitarbeiter*, amongst whom will be found most of the prominent dermatologists of Germany, and some of those

of Italy and England, France and Switzerland. It is proposed that the Journal shall have much of the character of the familiar *Centralblätter*; it will contain short original articles (none of which shall be more than 4 pp. in length) of a practical character, leaving longer and more theoretical communications for the *Vierteljahrsschrift für Dermatologie und Syphilis*, with which accordingly this new venture will not come into competition. Current dermatological literature, as found both in journals and books, will be reviewed, and questions of interest will be discussed from time to time in the form of special articles.

This number is an excellent one, and promises well for the future of the Journal. It opens with interesting articles by G. and F. E. Hoggan on "Nerve Changes in *Lepra Anæsthetica*," and by P. G. Unna on "The Cure of *Lichen Ruber* without Arsenic." These are followed by the discussion of such special questions as the physiological grounds on which the action of arsenic in skin diseases is based, nerve changes in certain skin diseases, the parasitic nature of *molluscum contagiosum*, the lymphatics of the human skin, &c. The programme laid down is thus closely followed, and the interest is well maintained throughout. We heartily commend this Journal to the support of the profession. The dermatologist's library will scarcely be complete without it.

All this reminds us of the fact that, while America is able to issue the finest journal on Dermatology in any language, and Germany and other countries support periodicals devoted to this special branch of medical research, Britain has fallen behind in the race, and has allowed her solitary Journal of Cutaneous Medicine to become defunct.

On Hæmorrhoidal Disorders. By JOHN GAY, F.R.C.S.,
Member of the Council of the Royal College of Surgeons;
Senior Surgeon to the Great Northern Hospital. London:
Churchill & Co. 1882.

MR. GAY introduces, in the form of a small memoir, some papers recently published by him in the *Lancet*, together with some additional points bearing upon the influence of the hepatic system in the production of hæmorrhoids. After a few remarks upon the veins generally, the author proceeds to discuss the anatomy of "piles," and from the results of

some careful injections, and the consideration of several specimens in the Museum of the College of Surgeons, he distinguishes three forms, described as:—

1. Anal or plexiform varicosity ;
2. Hæmorrhoidal varicosity—the varicose hæmorrhoidal vein ; and
3. Hæmorrhoidal varix—saccular or erectile—the true “pile.”

With regard to the cause of “piles,” Mr. Gay repudiates the commonly accepted view of portal obstruction being a frequent precursor, and in support of his opinion, adduces the clinical fact of the comparatively very few cases which are traceable to hepatic disease; and also, that the various affections of that organ, with the exception of cirrhosis, produce but a slight effect upon the portal or hepatic stream in its course to the cava.

On the possibility of hæmorrhoids being produced by any disturbance to the common trunks, causing a reflex and peripheral blood tension, we fail to see the obscurity which Mr. Gay would attach to the exclusive affection of the hæmorrhoidal plexus, to those other plexuses, the uterine, the vaginal, the vesical, and the prostatic, which with it make up one large pelvic anastomosis. The peculiarity of the venous distribution—the longitudinal direction of the veins in their course upwards in the sub-mucous coat, from the plexus near the anus, and the feeble support which they receive on one side from only the mucous membrane, sufficiently explains why the rectal under such conditions would be more readily affected than the other plexuses; for these latter are contained in the pelvis, situated mostly external to the viscera, with which they are especially connected, and so under the influence of the pressure of neighbouring parts, and the tubular sheaths of recto-vesical fascia, which in most cases surround them.

On the subject of treatment nothing new is suggested, nor does it seem possible that anything new could be suggested when Hippocrates commenced with an armamentum including styptics, cauterisation, excision, crushing, and evulsion.

In an appendix is described a useful and interesting collection of dried abnormalities, completing a most carefully written little work, and a valuable contribution to the subject to which it pertains.

REPORTS OF HOSPITAL AND PRIVATE
PRACTICE.

GLASGOW ROYAL INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. WM. MUIR.

FROM DR. DUNLOP'S WARDS.

NOTES BY MR. H. W. WHITE, L.R.C.P.E., HOUSE SURGEON.

SYPHILIS TREATED BY ALBUMINATE OF MERCURY.—(1.) J. M'E., *æt.* 30, labourer, was admitted into the Royal Infirmary, under Dr. Dunlop's care, on the 21st of January last. Patient stated that six weeks ago (three weeks after connection) he noticed a small sore on the prepuce, and suffered from dizziness, pains in the joints, and indigestion.

On admission it was found that the sore possessed a hard base, surrounded by an elevated callous border, with a dirty yellow secretion in the centre. The glands in the groin and down the back of the neck were distinctly enlarged and indurated.

23rd January.—For the first time it was noticed that his chest and back were covered with a well marked eruption of roseola. One-twelfth of a grain of the bichloride of mercury, in the form of the albuminate, was injected deeply into the deltoid muscle every night. At the end of five days this dose was increased to $\frac{1}{8}$ gr. Thirteen injections, equivalent to $1\frac{1}{4}$ gr. of the bichloride of mercury, were thus administered, when, owing to his gums being sore, the injections were stopped, and 3 grs. of iodide of potassium, with infusion of quassia, substituted. The rash had almost disappeared, and the induration round the base of the sore was almost gone, the sore itself being quite healed.

Patient was kept under observation until 11th March, when he was dismissed, to all appearance quite well.

(2.) James Cox, *æt.* 23, admitted 13th February, 1882, suffering from a very typical chancre, attended by a well marked secondary eruption, consisting of psoriasis, roseola, and acne. Injections of albuminate of mercury were ordered nightly. When six had been given, equal to 1 gr. of the bichloride, iodide of potassium was substituted.

Dismissed 10th March, the secondary symptoms having disappeared, and patient expressing himself as feeling quite well.

(3.) John Young, æt. 29, was admitted 16th February, 1882, with a Hunterian sore, roseolar eruption on back and chest, sore throat, and other signs characteristic of syphilis. Was treated like the preceding cases. Altogether six injections were given, each one containing $\frac{1}{2}$ gr. of the bichloride.

He was kept under observation till 11th March, when he was dismissed, apparently free from the disease.

(4.) A. F., æt. 38, admitted 10th January, 1882, suffering from syphilitic iritis and loss of sight, with an eruption of psoriasis on face, neck, and back.

He had been complaining of his eye for 12 months back. The cervical glands were distinctly enlarged and indurated. Solution of atropine ordered to eye, and $\frac{1}{12}$ gr. of the bichloride of mercury, with 3 grs. of iodide of potassium, were given internally thrice daily, and this was continued until 28th February, when patient expressed himself as feeling as ill as the first day he took the medicine, and certainly, so far as the eruption was concerned, there was no improvement. The medicine was therefore discontinued, and albuminate of mercury injections substituted. When seven injections had been given, he complained of feeling his gums a trifle sore, so the mercury was stopped.

It was intended to have kept him under observation for some little time longer, but business affairs compelled him to leave on 6th March, when he expressed himself as feeling much better, and able to see more distinctly than he had done since his eye had been affected. The eruption was rapidly disappearing.

In the above cases the solution of albuminate of mercury was injected deeply into the deltoid muscles, and no abscess or suppuration resulted. It was freshly prepared every day by dissolving 2 grs. of the bichloride of mercury in \mathfrak{zj} . water; to this a solution of one part of white of egg to two parts water was added, until all the mercury was precipitated as an albuminate; a saturated solution of common salt was then added drop by drop, until the ppt. was dissolved, and the solution made up, so that 5 minims contained $\frac{1}{12}$ gr. of the bichloride.

FROM DR. MORTON'S WARDS.

CASE OF VESICO-VAGINAL FISTULA.—[Reported by Dr. Chas. Buchanan Hunter, House Surgeon]. J. B., æt. 23, admitted into Ward XXVIII, with a vesico-vaginal fistula, resulting from a labour lasting twelve hours. Her admission took place

on the 4th June, 1881, and on the 14th of the same month she was operated on by Dr. Morton, who pared the edges of the wound, and then brought them together by means of silver sutures. Immediately after the operation an S shaped zinc catheter was introduced into the bladder through which the urine passed; but it was found that the zinc catheter irritated the wound very much, and a black vulcanite one was used instead. The sutures were removed on the twelfth day after the operation. The wound kept quite healthy till on 8th July it was all healed with the exception of a small opening at one corner, which allowed a slight leakage; Dr. Morton determined not to close the remaining portion for some time.

23rd July.—Dismissed, with the request to come back in a month to have the remaining portion closed.

She was readmitted on 23rd August, and on the 25th was operated upon.

There was considerable hæmorrhage after this operation, but it was controlled by means of powdered ice placed in the vagina. After this operation the patient was kept lying on her face for three days, and a soft elastic catheter was used.

11th September.—The sutures were removed, and the wound appeared quite healed, but on 22nd October it was observed that there was a slight leakage, and on examination, there was found to be a small portion on the anterior part of the wound had given way.

25th October.—Operated on again.

8th November.—Stitches removed, the wound looking well, and quite healed.

20th November.—Dismissed well.

WESTERN INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. W. G. DUN.

FROM DR. PATTERSON'S WARDS.

REPORTED BY MR. FRED. H. CLARK, M.B., HOUSE SURGEON.

WOUND OF ABDOMINAL WALL—PROTRUSION OF BOWELS—RECOVERY.—James W., æt. 26, commercial traveller, was admitted to the Western Infirmary, on 18th January, 1882. Had been at a ball the night before, where he had drunk champagne pretty freely, though he states that he was not drunk when he reached home about 3 A.M. Two hours after this, while attempting to get out of bed—a concealed one—to make

water, his foot slipped from the chair on which he stepped, causing him to fall heavily against the chamber pot which was standing on the floor at the side of the bed. Some of the broken pieces made a deep wound in the abdominal wall, from which there was very severe hæmorrhage, and the patient states that, before he lost consciousness, a considerable portion of his bowel was protruding. The hæmorrhage was temporarily stopped by stuffing the wound with old linen, shawls, &c., and the patient was removed to the Western Infirmary.

On admission, about an hour after the accident occurred, patient was found pulseless at the wrist, pallid, and only semi-conscious. On examination of the abdomen, an incised wound of about 6 inches in length was found, extending from the xiphoid cartilage downwards and outwards. For about $1\frac{1}{2}$ inch along the lower border of the ninth rib the wound penetrated the abdominal wall, and through this opening a considerable amount of bowel and omentum protruded. The blood clots were cleared out, the bowel, which was uninjured, was returned to the abdomen, and the edges of the wound were brought accurately together with silver wire sutures. Some thick catgut was inserted into the lower end of the wound for drainage, and antiseptic dressings were applied.

Ordered gr. ss. morphia suppository, to be followed by 1 gr. of opium every four hours, and a dessert-spoonful of brandy every hour. Urine to be drawn off every six hours.

During the day patient vomited thrice. In the evening a weak, flickering, radial pulse could be felt.

19th January.—Slightly better. Radial pulse can be felt but not counted. Heart's action feeble, about 90 per minute. Wound dressed under carbolic spray, and looking well. Slight pain complained of at wound, but nowhere else. No vomiting. Treatment to be continued. Small quantities of milk, beef tea, and iced soda water to be given in addition. Morning temperature, 97.2° F.; evening, 98° .

20th January.—Passed a fair night. Pulse much improved: morning, 95; evening, 100. Temperature—morning, 98° ; evening, 99.4° . Taking considerable quantities of beef tea and milk.

22nd January.—Dressed to-day. Wound found healed in its whole extent, except at most dependent part, from which a considerable amount of blood was oozing. Stopped by compression with bandages. Feeling stronger. Pulse much improved: morning, 82; evening, 90. Temperature—morning, 98.2° ; evening, 98° .

23rd January.—Dressed. Oozing stopped. Temperature—morning, 99·8°; evening, 100°. Ordered 2 oz. brandy daily, and gr. i of opium night and morning.

25th January.—Dressed, and wound looking well. Complaints of slight cough and spit. A few coarse dry râles heard on auscultating the chest. Temperature—morning, 100°; evening, 101°. Stimulating expectorants ordered.

3rd February.—Dressed, and some stitches removed from wound, which has now almost healed. Passed urine himself for first time yesterday. Gaining strength rapidly. Temperature and pulse normal. Opium stopped.

6th February.—Wound perfectly closed. Boracic lint substituted for antiseptic dressings.

10th February.—Dismissed well.

TWO CASES OF SARCOMA OF THE OVARY. RECOVERY AFTER REMOVAL.—CASE I.—Mrs. Frazer, æt. 47, admitted 21st November, 1881. Has always been a healthy woman, and has had 5 children. Menstruation regular. A year before admission she felt a dull aching pain in the left lumbar region following any severe exertion. This pain was invariably relieved by rest in bed. Seven months afterwards she felt a round hard lump in the left iliac region, which has gradually increased in size since. On admission it appeared to be about the size of a child's head, freely movable, and occupying the left iliac and hypogastric regions. The tumour seems to be quite free from the uterus. Slight pain is felt when she rises and moves about, but not when at rest.

30th November.—To-day, patient was put under the influence of ether, and an incision, 4 or 5 inches long, made through the abdominal wall. The intestines and peritoneum being held aside, the pedicle (about 3 inches long) was ligatured with strong catgut, divided, and the tumour, which was nowhere adherent, removed. The edges of the abdominal wound were brought accurately together with carbolised silk ligatures, and antiseptic dressings applied, the whole operation having been performed under the carbolic spray.

Gr. ss. morphia suppository introduced, to be repeated at night. Milk and soda water, occasionally, in small quantities, and the urine to be drawn off every 4 hours.

The tumour, on examination, was found to be oval shaped, 6½ inches in longest diameter, the other diameter being nearly the same. A distinct external fibrous capsule was present, and on section, the bulk of the tumour was seen to be whitish in colour; but in some parts the tissue was mottled red, and more

irregular. Throughout the tumour, also, were some small cysts. The tissue of the whole was somewhat tough, and microscopically was abundantly cellular, the cells being elongated with very marked nuclei of an elongated or somewhat stellate shape.

1st December.—Since operation patient has kept very well. Slight pain complained of at wound. Temperature and pulse normal.

2nd December.—Slight dry cough complained of to-day. Allowed a little beef tea and stimulating expectorants.

4th December.—Wound dressed and looking well. Still a slight cough. Otherwise very well.

8th December.—Wound dressed. Patient very well. Her temperatures never having reached 100° since operation.

11th December.—Dressed and stitches removed. Boracic lint applied.

3rd January.—Dismissed well.

CASE II.—Isabella M'P., æt. 38, single, admitted 12th December, 1881. Seven years ago first noticed a lump in left iliac fossa, which gradually grew till two years ago, since which it has remained stationary. Seven months before admission she was confined to bed for two months with severe and fixed pains in the left hypochondrium, and very persistent sickness, vomiting following any attempt to take food.

On examination, the whole abdomen was found more or less filled with an almost solid tumour, rounded, apparently fixed above to under surface of liver, but more movable below. The uterine sound passed with difficulty to the extent of 3½ inches, and, from the fixation of the organ, it was thought likely that considerable adhesions were present.

15th December.—Patient having been put under ether this morning, an incision of about 8 inches was made through the abdominal wall. The bowels and peritoneum having been turned back, a large tumour was exposed, attached by a pedicle of about 3 inches to the left ovary. The tumour was adherent to bowels, peritoneum, and under surface of the liver, —forty-five minutes being taken to separate the adhesions. The pedicle was secured with strong catgut, the bleeding points ligatured, and the cavity carefully sponged with 1-40 carbolic solution. Carbolic silk ligatures were used for the deep, and fine catgut for the superficial, stitches of the abdominal incision. A straight perforated glass drainage-tube was inserted into the pelvis at the lowest part of the wound, and the whole dressed antiseptically. The operation, which was performed under the carbolic spray, lasted one hour and

twenty minutes. Gr. ss. morphia suppository given, and zii brandy every hour till shock passed off.

On examination the tumour was found to be a large oval mass, weighing, when dried, 7 lbs. and 3 oz., 11 inches in length and 7 inches in its transverse diameter. The surface was smooth, there being at one side a kind of contraction like a hilus, which gave the tumour very much the shape of a kidney. The colour, both externally and internally, was brownish, except at the hilus, where it was white. The consistence of the whole was tough. Microscopically, it was found to be composed of abundant spindle-shaped cells, and a good deal of fibrous tissue.

Evening.—An hour after the operation, patient was suffering from severe shock, her temperature being 94° F. in the axilla. At 9 P.M., temperature 97° ; pulse small and weak, 86 per minute. Sponges removed 3 oz. of bloody serum, having been discharged through the tube.

16th December.—Sponges again changed. Amount of discharge, 2 oz. Persistent vomiting follows any attempt to take food. Urine highly albuminous, but no tube casts or blood discovered. Temperature—morning, 98.6° ; evening, 99.2° . Pulse—morning, 110; evening, 124. Ordered beef tea enemata, 2 oz. every two hours. At 9 P.M. sponges changed as before.

17th December.—Whole wound dressed this morning. Little discharge in dressing or sponges. Drainage-tube removed. Wound almost completely united. Vomiting follows any attempt to take food by the mouth, but patient otherwise well. Enemata continued. Temperature—morning, 99.2° ; evening, 99.2° . Pulse—morning, 112; evening, 110.

24th December.—Dressed to-day. Stitches removed and boracic lint applied. Sickness and vomiting gone, and patient can now take milk, beef tea, &c., by the mouth.

29th December.—Wound quite healed. Allowed a little solid food, and able to be up for a short time.

6th January.—Dismissed well.

PRIVATE PRACTICE.

CASE OF CONGENITAL CLOSURE OF RECTUM.

By MR. JOSEPH THORNLEY, L.R.C.P.Ed., and L.F.P.S.Glasg.; Bolton.

ON Wednesday, 29th March, 1882, I was called to see a child which, the mother said, was unable to have its bowels opened.

It had been born two days previously, and was said to have been a fine healthy looking child. On the day following its birth it showed evidence of suffering great pain. The abdomen of the child was found greatly swollen, and the veins were very prominent. I attempted to administer an enema, but as the water all returned, I explored the rectum by means of a catheter, and afterwards with my finger, and found a complete septum, about an inch and a half from the anus. On the second day there was also stercoraceous vomiting, which continued for three days, after which it ceased. The child gradually sank, and died on the Saturday forenoon, having lived over five days.

On *post-mortem* examination the abdominal cavity was found to contain a large amount of meconium, and matter was seen to well out from apertures in the intestine, which was greatly distended. On closer examination it was seen that the ascending colon was particularly distended, and that for a space of about two inches it was bulged out, and its coats thinned and torn. There were three apertures in it, of considerable size, having the appearance as if they had been produced by blowing up the tube till it burst.

The rectum was found to end in a blind pouch, which reached nearly to the anus and presented considerable distension. The anus had very much its normal appearance, and a probe could be passed into a blind sac. The dilated pouch of the rectum lay behind this sac, and reached almost to the level of the anus itself.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1881-82.

MEETING VI.—3RD MARCH, 1882.

PROFESSOR GEO. BUCHANAN, *President, in the Chair.*

DR. J. C. RENTON read NOTES OF A CASE OF UNUNITED FRACTURE OF THE FEMUR, REMEDIED BY OPERATION, and also of a CASE OF RESTORATION OF THE LOWER LIP BY TEALE'S OPERATION,

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where it had been destroyed by a burn many years ago, the cicatrix of which had produced great deformity.

Dr. Buchanan complimented *Dr. Renton* on the excellent results which he had obtained.

Dr. Graham, of Paisley, said that the female patient, whose lower lip had been restored, was, at the time she was suffering from the burn, under his care in the Paisley Infirmary. The case was a very troublesome one, and the attempts made to obviate the contraction were unsuccessful. Some years after he had attempted to restore the lip by raising the cicatricial tissue up from the sternum and taking two flaps from the neck, but they sloughed. He complimented *Dr. Renton* on his results.

Dr. George M'Ewen said he had once had a case of un-united fracture of the femur in its upper third, similar to that described. He cut down on the ends of the bones, and applied galvanism to them. The limb was treated in a stucco box. The patient made a good recovery.

DR. THOMAS BARR showed THE TEMPORAL BONES OF A PATIENT WHO HAD DIED OF ACUTE ABSCESS OF THE BRAIN. He had suffered from purulent discharge from the ear for ten years, and a few days before his death he was seized with severe pain in the head, and inability to walk from a tendency to stagger. These symptoms ended in coma and death. *Dr. James A. Adams* had made the *post-mortem* examination. The dura mater was turgid, and the upper surface of the right cerebral hemisphere bulged more than the left. Purulent matter was found in the middle fossa, the surface of the right temporal lobe was covered with pus, and an abscess was found in it. The dura mater covering the right temporal bone was found to be perforated.

Dr. J. A. Adams, who had made the *post-mortem*, made the following remarks:—

"The description of the *post-mortem* made by me has been so well laid before you by *Dr. Barr* that I need add very little to his statement. No foetor was observed until the base of the brain was lifted up, nor was there any evidence of the presence of pus until an incision was made into the right lateral ventricle. We were not allowed to make any examination of the thoracic or abdominal viscera.

"By means of a V shaped saw cut, both temporal bones were removed for more careful examination, and you have heard from *Dr. Barr* the condition they were found to be in.

"There were one or two points in this interesting case that

I should like to remark upon, as they exactly bear out some published conclusions of my own upon the relation of abscess of brain to disease of the ear.

"In the first place, I would ask you to note the age of this man. He was in the prime of vigorous manhood, between 30 and 40 years of age. This is the period when abscess of the brain is most apt to occur from aural disease. In a table of over one hundred cases, which I compiled from all the trustworthy sources I had access to, I found that less than 5 per cent of the cases of abscess occurred in childhood, while above 72 per cent occurred during adult life.

"From the admitted facts that aural disease causes more than one-half of the cases of abscess of the brain, and that aural disease is much more common in infancy and childhood than in the adult, one cannot at first understand how it is that children are exempt from the liability to cerebral abscess. On examining the organ of hearing at different ages, I found that the explanation lay in the changes which it underwent as it approached full development. In the child there is only one mastoid cell, the *antrum mastoideum*, which lies above and behind the tympanic cavity. This single cell has a fissure on its outer wall, the squamo-mastoid suture, through which pus finds a ready exit to the external surface. While pus can get so easily *outwards*, it is prevented from travelling *inwards* towards the brain by the whole thickness of the, as yet, solid mastoid process.

"In the adult, however, the mastoid cells gradually develop in the direction of the brain, and in not a few cases they travel as far as the lateral sinus. The squamo-mastoid suture gets consolidated, and the outer cortex of the mastoid process becomes thickened by the increasing strength of the sternomastoid muscles. Purulent matter, then, retained in the mastoid cells cannot force its way outwards through the cortex as it can in the child, but finds an easier route to the inside towards the lateral sinus and brain.

"Various other causes tend to favour the extension of mischief to the brain in the adult. These causes I cannot at this advanced hour stop to notice.

"In the case before us there was a portion of apparently healthy brain tissue interposed between the abscess and the seat of disease in the ear. Dr. Barr, a year ago, drew attention to this occasional condition of things; I ventured, at a subsequent period, to explain the phenomenon on anatomical grounds as follows:—

"We know that the veins which return the blood from the

mastoid cells, and from part of the tympanum, pass into the lateral sinus; and we also know that a considerable number of veins enter the lateral sinus from the middle and posterior cerebral lobes at a point higher up than the place of entrance of the mastoid veins. On these facts I ventured to suggest that the continual irritation of tympanic or mastoid disease might tend to cause thickening of the dura mater forming the lateral sinus, and more or less occlude that channel, and that septic matter could travel to the sinus by the mastoid veins, and thence by the cerebral veins to the brain.

"This theory is, I think, completely established by this case. for, as Dr. Barr has told us, the lateral sinus is quite occluded just as it pours its contents into the internal jugular vein; and, as I have already stated, there was a considerable abscess or collection of pus in the lateral ventricle.

"These facts are strong arguments in favour of the operation of trephining the mastoid process in cases of aural disease where head symptoms appear even in the slightest degree. I would even go further and assert that I believe it to be a safe operation if properly performed, and one which might be justifiable in cases of otorrhœa that defy other modes of treatment. In recent cases of dry catarrh of the tympanum, it might do great good, for, by means of an aperture made into the antrum, the dry mucus which clogs the ossicles might be removed by the douche or other means, and this without any laceration of the membrana tympani or injury to other essential structures.

"The chance of injury to the dura mater can be avoided by the use, as Dr. Barr suggests, of small sharp chisels, or what, in my opinion, is better, the delicate American foot-drill used now-a-days by dentists in clearing out a tooth cavity.

"Having, on many occasions, had opportunity of witnessing Dr. Barr's great dexterity in ear cases, I also anticipated that his paper to-night would be well worth coming to hear; and I have to thank him, before sitting down, for much information gained."

DR. BARR read "ON THE TREATMENT OF CERTAIN INTRACTABLE FORMS OF PURULENT DISCHARGE FROM THE EAR."

Dr. Johnstone Macfie did not think that the treatment suggested by Dr. Barr was very new, for although it might be new to general practitioners it had been practised by specialists again and again for years. He insisted upon the necessity for thorough cleanliness in the treatment of ear diseases. He had read Dr. Adams' paper with great interest.

Dr. Graham, of Paisley, had seen two cases of suppuration of the middle ear in adults. In one it terminated fatally in the way *Dr. Adams* had described; in the other, a large abscess formed in front of the external auricle.

Dr. Glaister complimented *Dr. Barr* on his paper, and said that at present he had two severe cases of suppurative disease of the ear which he would endeavour to treat in the way recommended.

Dr. J. Lindsay Steven asked, with reference to the chorea which was present in one of the cases, and which improved when the ear disease improved, whether *Dr. Barr* was inclined to connect the chorea with the ear disease in any way, or whether he looked upon the simultaneous occurrence of the two states as a mere coincidence.

Dr. Barr said that he had not said that the treatment was a new one, but some of the details of it, as practised by himself, were. He was in favour of trephining the mastoid bone, but thought a small chisel should be used for the operation. He could not say whether the chorea had any direct connection with the ear disease. Giddiness was one of the commonest subjective symptoms, and was supposed to be due to pressure on the labyrinthine fluid. He thought that any suggestion as to the treatment of dry catarrh would be readily listened to.

GLASGOW SOUTHERN MEDICAL SOCIETY.

SESSION 1881-82.

MEETING VIII.—26TH JANUARY, 1882.

DR. N. CARMICHAEL, *President, in the Chair.*

DR. A. NAPIER showed a series of NINETEEN MICROSCOPIC PREPARATIONS OF THE VARIOUS SKIN PARASITES, and made some remarks on the pathology of parasitic skin diseases in general. Preparation No. 1 showed the "nits" of *pediculus capitis* cemented to the hair, the cases or nests being occupied by nearly fully developed lice. No. 2 was a good specimen of the female of the itch insect, the *acarus scabiei*. Nos. 3 and 4 showed specimens of the *microsporion furfur*, the fungus associated with tinea versicolor. The spores were round, not granular, and arranged in heaps, between which

the thick, wavy, and much branched mycelial threads interlaced freely. Nos. 5 to 13 showed the *trichophyton*, the fungus of ringworm, in most of the stages and modifications in which it occurs. Nos. 5 and 6 exhibited some short brittle hair stumps taken from a ringworm patch of about three months' standing, the fungus presenting its ordinary characteristic features as usually figured; the hair was swollen and irregular in outline, and broken up by the fungus, its structure being in great part obscured by the presence of great numbers of round spores of uniform size. Very little mycelium was visible. No. 7 showed the form the fungus usually takes in recent cases, when it is undergoing rapid growth. The hair was in process of disintegration by mycelium and a great abundance of a fine granular material—the *stroma* mentioned by Fox. Preparations 8 and 9 showed short, glossy, and apparently healthy hairs which had been removed from a patch of ringworm which had been blistered; they illustrated one of the ways in which the fungus attacks a hair—namely, by direct inoculation—the first of the two exhibiting a fusiform swelling, with a breach of the hair cuticle at one part; the second a hair in which the process had advanced much farther, the mycelia ramifying freely up and down in the hair substance. These hairs had probably been infected afresh. In preparation No. 10 was seen a hair, the lower part of which was split and bent back on itself in a very unusual and fantastic manner. In preparations 11 and 12 were seen typical specimens of the ringworm fungus attacking the hair of the beard. Preparation 13 showed a hair from one of those cases of ringworm which very closely resemble alopecia areata. Here the fungus was seen in a form which Dr. Napier has found to be constant in such cases, offering a sign which is quite diagnostic of ringworm of old standing. The fungus elements occurred in groups scattered through the length of the hair, with intervals of apparently sound hair. They varied in size, some being mere granules; they were dark, and apparently deeply pigmented. Others appeared in the form of more elongated, irregular, rod-shaped bodies rounded at the ends. There were no spores of the ordinary circular form, no mycelium, and no stroma or granular material. The hair cuticle was intact, showing that the germs of the fungus had grown up from the papilla at the bottom of the follicle. Preparations 13 to 17 showed examples of the fungus of favus, the *achorion Schönleini*. In No. 13 the parasite was seen branching freely and multiplying in the characteristic favus exudation. In 14 numerous round

spores were arranged in chains or rods, an appearance not so often found in reality as might be expected from descriptions. Nos. 15 and 16 showed unusually well the mycelia or threads of achorion in the substance of the hair. No. 17 showed a point which is sometimes of use in the diagnosis of favus: when a hair from a case of favus is placed under the microscope, and all or nearly all the light is cut off by turning the mirror, the diseased hair presents a bright glittering appearance, while it is dark and opaque when properly illuminated, a normal hair being bright when illuminated, but scarcely visible when the light is cut off. The brightness of the diseased hair when partially illuminated is due to the presence of air in the substance of the hair, this air being admitted through the disintegrating action of the fungus. Preparation 18 showed a hair, with its sheath, taken from the margin of a patch of alopecia areata; at one part near the root it was thinned and partially broken through, apparently from pressure; no trace of fungus elements was visible. Dr. Napier stated that he had carefully examined scores of hairs taken from such cases: hairs taken from the very margin of the patches, and from points a slight distance removed from the margin; hairs without their sheath and with their sheath; high and low powers had been used, and a great many methods of preparation, steeping, and staining; but he had never yet been able to detect anything which could certainly be called a fungus.

MEETING XI.—9TH MARCH, 1882.

DR. NEIL CARMICHAEL, *President*, in the Chair.

PROFESSOR M'CALL ANDERSON showed, and made remarks upon, SOME PATIENTS WITH AFFECTIONS OF THE NERVOUS SYSTEM.

CASE I.—That of an engineer, æt. 49, admitted to Western Infirmary on 11th January, complaining of swelling of the extremities, weakness of the legs—especially of the left—with pains in the thighs and tottering gait; which symptoms came on a year ago. The œdema of lower extremities—Dr. M'Call Anderson thought—was due to vaso-motor paralysis, such as we have in “exophthalmos.” There were also noted—numbness of lower extremities, marked ataxy,

absence of patellar tendon reflex, constipation, difficult micturition, and tenderness over the lower part of spine. *Diagnosis*.—Locomotor ataxia. *Treatment*.—Rest, saline purgatives, and wet-cupping over tender spine, which was followed by gradual improvement, till now he walks with slight staggering, turns with little swaying, can stand with feet close together and eyes shut—if supported a little at first. Feeling of tightness in calves of legs and tenderness over spine gone; constipation and urinary trouble removed; but patellar tendon reflex still absent.

CASE II.—That of a man, æt. 53, admitted in December, 1879, complaining of lightning pains in legs and body, cord constriction round waist, numbness of feet and loss of control of rectum. There was no staggering in this case. He was admitted again in April, 1881, for nocturnal emissions, which were cured by rest and phosphorus syrup. In November, 1881, he was once more admitted suffering from stupor, much staggering, and complaining of pains in the abdomen. On 2nd December, the *left* sciatic nerve was stretched without improving his symptoms. On 25th December the *right* sciatic nerve was stretched—and from that time his symptoms abated; feeling of cord constriction ceased; control of bowels and bladder was regained, and the pains in abdomen and difficult breathing were removed. Although patellar reflex is still absent he can now walk and stand very much steadier. Dr. McCall Anderson remarked that in such cases the nerves should be well stretched in the direction of the spinal cord.

CASE III.—J. K., æt. 49, admitted on 11th January, 1882, complaining of paralysis, accompanied by pain in joints. In December, 1867, he had rheumatic fever. In 1875 he was affected with giddiness and feeling of fulness in the neck, which continued until 1876, when—while he was ascending a stair—he felt weak, sat down, and became unable to rise. He was found to be paralysed on right side of face and body; he had diplopia; an ulcer formed on inner side of left knee; there was rigidity of left arm and leg, and numbness of the latter; sweating and flushing of left side of face. Such was his condition on admission to hospital. There was exaggeration of patellar reflex on left side, and the dynamometer registered 35 kilos. Concerning this case, Dr. McCall Anderson remarked that we had to determine the seat and nature of the lesion. Affection of the spinal cord gives rise to these symptoms usually, but in this case the cerebrum

was obviously implicated; we had a double lesion—on the one side involving the motor, and on the other side the sensory nerves, the sweating being due to affection of the sympathetic. There was no heart disease to favour embolism; no degeneration of vessels, or kidney disease, to indicate the idea of hæmorrhage. We found, however, enlarged glands, noted his muddy complexion, and learned that, twenty-four years ago, he had a chancre, followed by secondary manifestations. *Diagnosis*.—Syphilitic affection of brain and cord. *Treatment*.—Commenced on 29th January—Mercurial inunction. By 10th February he was salivated, could walk better, the anæsthesia was gone, and the dynamometer registered 70 kilos. Unilateral sweating also improved. When salivation subsided treatment was resumed, and is still being continued. Dynamometer registers 100 kilos; his general health is greatly improved, and he has increased a stone in weight.

Dr. Glaister remarked upon the absence of gastric crises in cases of locomotor ataxia, and mentioned that nerve-stretching had been employed to advantage in various motor nerve affections.

Dr. Park thought there was abatement of the symptoms, but the improvement was outside the lesion proper to locomotor ataxia, and directed special attention to the beneficial administration of mercury in tertiary syphilis.

Dr. M'Vail was of opinion that, in the first case, there was at least an element of polio-myelitis; which element was benefited by the cupping practised. In the third case, he stated that a hæmorrhage in the medulla, just about the point of decussation—especially on left side—would account for the group of symptoms presented.

The President thought nerve-stretching did not influence so much the central lesion proper to the disease as it modified the conducting fibres proceeding from those centres.

Dr. Anderson, in reply, stated that he made a practice of never applying special treatment till the patient was acclimatised to hospital, and he had seen how far improved hygiene affected the symptoms. If the third case were one of hæmorrhage, the hæmorrhage was in a most unusual seat. Moreover, the result of the treatment proved syphilis to be the basis of the case.

M E D I C A L I T E M S .

UNDER THE DIRECTION OF
ALEX. NAPIER, M.D.

The Movements of the Iris and their Mechanism.—As the results of 49 experiments on dogs, cats, goats, and more especially white rabbits, the author, M. Moriggia, comes to the following conclusions, which are recorded in *Moleschott's Unters. zur Naturl. &c.*, xiii, 1, p. 1:—In animals which have been kept for several weeks in the dark, the pupil generally dilates more widely in the dark, and contracts more completely in the light, than in those which have been kept in the ordinary conditions as regards light and darkness. Under the same conditions the mydriatics and myotics act much more promptly. The pupil, when dilated (though not to its fullest extent) by atropin, does not contract in response to light. If a concentrated solution of atropin be dropped into one eye, in goats and rabbits, it has little or no effect on the pupil of the other eye; in albino rabbits, however, it acts very powerfully on the other eye. Even when the pupil is dilated as widely as possible this condition yields at once when the superior cervical ganglion of the sympathetic is extirpated. On stimulating the uninjured cervical sympathetic by means of an induced current, the pupil is widely dilated. The mydriatic action of atropin is less marked on the side from which the superior cervical ganglion has been removed, whether its removal has been effected before or after the application of the atropin. On subjecting rabbits to very severe and general muscular exertion, a transient, but very marked, mydriasis was noticed; but this was always less marked on the side on which the uppermost cervical ganglion was wanting. The highest degree of dilatation induced by the use of atropin gives place to contraction when the animal is caused to bleed to death through a wound in the heart. On the other hand, the myosis induced by copious hæmorrhage passes into pronounced and permanent mydriasis if atropin be dropped into the eye of an animal just dead, even on that side on which the superior cervical ganglion of the sympathetic had previously been extirpated.—*Cbl. f. d. Med. Wiss.* 15th April, 1882.

Effects of Eserine and the Mydriatics, Atropine, Duboisine, Homatropine, and Hyoscyamine.—After a series of careful experiments, Herman Schäfer (*A. f. Oph.*, Vol.

x, No. 2) states, in regard to the influence of eserine upon the three agents, atropine, duboisine, homatropine, that it counteracts the effects of homatropine completely and permanently; that of duboisine, and more particularly that of atropine, however, only when instilled in larger quantities, and then only for a brief period, after which it yields again to the effects of the latter.

The *absorption* into the aqueous humour of these three substances (atr., dub., hom.), as well as their *transmissibility*, has been demonstrated by experiments. Aqueous humour containing atropine and duboisine acts more rapidly when transferred. Aqueous humour containing atropine and duboisine secures maximum dilatation, but that charged with homatropine does not effect this result completely.

In general, it is sufficiently demonstrated that, as respects the *dilatation of the pupil*, atropine, if somewhat slower, possesses a more lasting influence than duboisine; that the latter dilates the pupil in a shorter time, and momentarily acts more energetically, but loses its influence more quickly; finally, that homatropine develops its influence in a briefer time than either of the other agents, but produces a lesser dilatation of the pupillary diameter, and is the first to decline in its effects. The degree of concentration in which the homatropine is employed is apparently without influence upon the duration of the effect.

The *accommodation* is paralysed more rapidly by duboisine and homatropine—by duboisine even a little more so than by homatropine; with the latter, however, the normal state returns in twenty-four hours, with duboisine after three to four days. Paralysis of the accommodation by atropine proceeds very gradually, and persists the longest.

In accordance therewith would be the *practical application* of these three agents. Where it is desired to secure simply dilatation of the pupil for the purpose of examining the fundus, or to paralyse the accommodation for the certain determination of the state of the refraction, homatropine is decidedly to be preferred to the other drugs.

Dr. S. D. Risley, in a recent paper (*Transac. American Ophth. Soc.*, 1881), also concludes, "that for the correction of anomalies of refraction in otherwise normal eyes, the homatropine is to be preferred." If, on the other hand, a therapeutical effect is desired, homatropine is to be set aside, on account of its insufficient and too restricted effect, and the application of atropine and duboisine can alone enter into consideration. Risley, from a therapeutic standpoint, concludes "that, if retino-

choroidal disturbance is also present, hyoscyamine or duboisine is preferable; (a) to atropine, because of the shorter duration of the treatment; (b) to homatropine, because of their more persistent control over the ciliary muscle; and that hyoscyamine is preferable to duboisine, since the tendency to systemic poisoning is not so great."

Schäfer recommends the use of duboisine in iritic conditions, with or without extensive synechiæ, where atropine had been employed for some length of time, and with but partial success, on account of conjunctival and ciliary injection. Duboisine, he says, never causes conjunctival irritation, and even diminishes that caused by atropine.—*Med. and Surg. Reporter*. 25th March, 1882.

Vital Statistics in England and Germany.—The January number of the *Vierteljahrsschrift f. Gericht. Med.* (Berlin) contains a paper by Dr. Ebertz, in which the mortality and the causes of death in England and Germany for the year 1880 are compared. The tables given are compiled from the weekly returns of the Registrar-General and the monthly reports of the medical officers of health in England on the one hand, and from the weekly returns of the German Health Bureau and the medical statement for the city of Berlin on the other. Dr. Ebertz draws some striking conclusions from his comparison of the mortality returns of the twenty large English towns, with an estimated population in 1880 of seven and one-half millions, and of the one hundred and forty-nine German towns, with an estimated population of seven and three-fourths millions; of London and Berlin; of individual small towns; and of rural districts in the two countries having similar populations. (1.) A comparison of the relative mortality of England and Germany for the year 1880 is not favourable to the German cities. For England (twenty large towns) the yearly average was 22·8, and 21·7 in the rural districts. In Germany (149 towns) it was 27·1. In London, 22·4; in Berlin, 29·8. (2.) The mortality in general in Germany, and especially the mortality of children, was much higher than in England. In the twenty English large towns the average infant mortality (deaths under 1 year) for the year 1880 was 170 for each 1,000 births; in the rural districts, 173. In the 149 German towns it was 275; in London, 159; in Berlin, 308. (3.) The mortality of Berlin, compared with that of London, is especially unfavourable. (4.) The mortality of children in Berlin in the summer months, compared with that of children in London in the same months, is enormous. In London, in

the months of May, June, July, August, and September, the numbers were 109, 115, 207, 245, and 189 respectively, against 274, 643, 684, 376, and 369 in the same months in Berlin. (5.) The death-rate among children was smaller in London than in the other large English towns, and in these again than in the country districts, which is a striking example of the favourable results reached by London particularly, and by the other large towns, in the domain of sanitary prophylaxis. (6.) No less forcible testimony to this is the fact, shown by the English tables, that not only in the country districts, but also in the large towns, and eminently in London, the mortality from infectious diseases was less than that from diseases of the respiratory organs, even excluding phthisis.

These conclusions, Dr. Ebertz reflects, are of the utmost interest to Germany, proving, as they do by figures, that the English sanitary organisations have contended more effectually against the dangers to health incident to life in large cities than the Germans have succeeded in doing; and he believes that a thorough study of English work in sanitation will bring his countrymen much nearer the greatly-to-be-desired end of reducing their still high death-rates, at least to the scale of the English.—*Boston Med. and Surg. Journal*. 16th March, 1882.

Physiological Action of Boldo.—M. Verne made a series of experiments on himself with boldo (the leaves of the *boldea fragrans*, or *peumus boldus*), and came to the following conclusions regarding its action:—The essential constituents of boldo, including boldine and some aromatic principles, are eliminated by the urine. Boldo does not influence the circulation, the temperature, or the quantity of urine secreted. It augments to a sensible degree the elimination of urea. The author thus places it alongside coca, the action of which on nutrition is similar. He notes also that he has frequently observed, both in himself and others, slight excitement during the first day that the medicine was taken; but this soon disappeared, and not uncommonly patients recovered sleep which they had previously lost through anæmia or some other cause which destroyed the equilibrium of the nervous system.—*Bull. Gén. de Thérap.* 15th April, 1882.

Deafness Coming on During an Attack of Mumps.—Two cases, in which deafness suddenly supervened during the course of an attack of mumps, are recorded by Dr. A. H. Buck in the *Ztschr. f. Ohrenheilk.*, xi, 26. In the first case the

patient (a girl) was seized with very acute pain in the ear on the third day of the attack, and next day she was deaf. In the second case, the patient (a man) suffering from the same affection, became deaf, but suffered no pain in the ear. In both cases both parotid regions were affected; nevertheless, in the first case the deafness was limited to one side. The author thinks that in both instances the deafness was due to some affection of the labyrinth.

Moos records (*Ibidem*, p. 51) the case of a boy of 13, who, on the fifth day of an attack of bilateral parotitis, became deaf. On the sixth and seventh days vomiting occurred; on rising from bed on the eighth day the patient's gait was staggering, but this symptom gradually subsided. There was no loss of consciousness. Tuning-forks *c* and *c'*, placed on the middle of the cranium, were heard in the right ear, but tuning-fork *a'* was inaudible; all three forks were inaudible on the left side.

That he had here to do with an affection of the labyrinth, and not with a basilar meningitis, the author thinks most probable, as consciousness was throughout undisturbed. As regards the manner in which the affection is transmitted from the parotid gland to the organ of hearing, the hypothesis that this takes place directly, though by paths which are yet unknown to us, seems most plausible. But bearing in mind the fact that both testicles are not unfrequently inflamed during an attack of mumps, it seems to the author very probable that in many cases of parotitis certain materials enter the circulation, and, in passing through organs having a very complex circulatory apparatus (*e.g.*, the testicles or internal ear), especially when the return of blood is interfered with, are apt to be arrested, and to give rise to more or less disturbance.—*Cbl. f. d. Med. Wiss.* 15th April, 1882.

Modification of Pettenkofer's Test for Biliary Acids.—E. Drechsel recommends the following modification: add to the solution of the biliary salts (with alkalies), which should be as concentrated as possible, and should be contained in a test-tube, syrupy phosphoric, instead of sulphuric acid, until the whole liquid appears to be somewhat syrupy. Next add a little cane sugar, and heat the test-tube by setting it in the neck of a flask containing boiling water. After a short heating, the characteristic red or red-violet colour will make its appearance, even if only traces of biliary acids are present. At the same time, it is not necessary to avoid the addition of an excess of cane sugar.—(*Zeitsch. f. anal. Chem.* 1882, 150.)

New Remedies. April, 1882. The Editor of the last named Journal adds a note to the following effect:—We find that the above reaction succeeds best in the following manner:—Put about 5 cc. of syrupy phosphoric acid into a test-tube, add 2 drops of a fresh solution of cane sugar (1:4), and afterwards 1 drop of the solution containing biliary acids. This solution may be quite dilute. Fresh ox gall, diluted with fifty times its volume of water, will give the reaction very nicely. (We have not ascertained the limit of delicacy.) Then set the test-tube in the neck of a flask containing boiling water. In a very short time the surface of the liquid in the test-tube will assume a rosy tint, which will permeate the remainder of the liquid, but will always be a little darker near the surface, where air is present. The tint of the liquid will gradually darken, and finally become scarlet or claret-red.

Treatment of Ulcers by the Sub-Carbonate of Iron.—The “sub-carbonate” of iron here described is prepared from a solution of ferrous sulphate by the addition of a solution of carbonate of soda, the ferrous carbonate which is precipitated being then dried in the air; in drying it loses carbonic acid and absorbs oxygen, forming the “sub-carbonate,” which consists simply of sesquioxide of iron, retaining a little (8 per cent) of carbonic acid. The application of this substance to ulcerated surfaces of every kind gives, according to Dr. M. Zartarian, the best and most prompt results, the cure being usually complete in from ten to forty days. The ulcer is first washed with a decoction of walnut leaves, and the powder sprinkled on in a thick layer; the part is then covered with a starch poultice, and carefully bandaged. This is done twice daily.

The good effects of this application are attributed to the drying and stimulating action which it excites on the ulcerated surface. It awakens the vitality of pale, indolent ulcers with an ichorous secretion, and causes them to take on a healthy action. The temperature of the ulcerated surface is sensibly raised after this treatment. The galvanometer gives evidence also of a considerable disengagement of electricity, which explains, according to this writer, the stimulating action of the remedy.—*Journal de Thérap.* 25th January, 1882.

Iodoform in Childbed.—Mann, of Budapest, has used and recommends iodoform as an antiseptic in midwifery. It is deodorised by means of the tonka bean, and dusted on any raw surface, which it thus coats with an antiseptic film. It is

also strongly recommended for erosion and fissure of the nipples as well as for malignant disease of the womb.—*Centralbl. für Gynäk.* Feb. 1882.—W. L. R.

Capillary Drainage of the Abdominal Cavity.—Hegar, of Freiburg, very strongly recommends drainage after all operations, such as ovariectomy. He prefers putting pieces of carbolised cotton wool or sponge into a wide drainage-tube and frequently changing them, especially during the first twenty-four hours. He thinks the abdomen should not be very firmly bandaged, as this has a tendency to interfere with the peristaltic action of the bowel, and so allow it to get forced into the openings in the drainage-tube. For the same reason he advises that the patient should not be kept from moving to a moderate extent. If one simply puts in a drainage-tube and waits for it to overflow into sponges placed on the top of it, then fluid, sufficient to kill, may gather in the abdominal cavity.—*Centralbl. für Gynäk.* Feb. 1882.—W. L. R.

On the effects produced by Liq. Ferri Sesquichl., Tinct. Iodi, and strong solutions of Argent. Nitr. when introduced into the Peritoneal Cavity.—Schwarz, of Halle, believes that it is not a common or an easy thing for injections into the cavity of the uterus to reach the peritoneum on account of the narrowness of the ostium uterinum. He points out that experiments on the cadaver are of little value, because the most important factor, contractile power of the muscular fibre, is lost. The result of seven experiments on dogs, in which from half to one ccm. of undiluted liq. fer. sesquichl., tinct. iodi, or a 10 p. c. sol. of arg. nit. was introduced into the peritoneal cavity by a wound in the abdominal wall, was that the two former agents gave rise to little pain or inflammation; while the latter caused severe pain, and in two cases death from shock in a few hours. Six months later two of the animals were killed, and there were found no traces of injury or adhesion, nothing but one or two yellowish patches on the surface of the peritoneum.

The author is of opinion that we may use strong solutions of iron to stay bleeding in the abdominal cavity without fearing any hurtful result.—*Centralbl. für Gynäk.* Feb. 1882.—W. L. R.



Fig. C.



Fig. C.I.

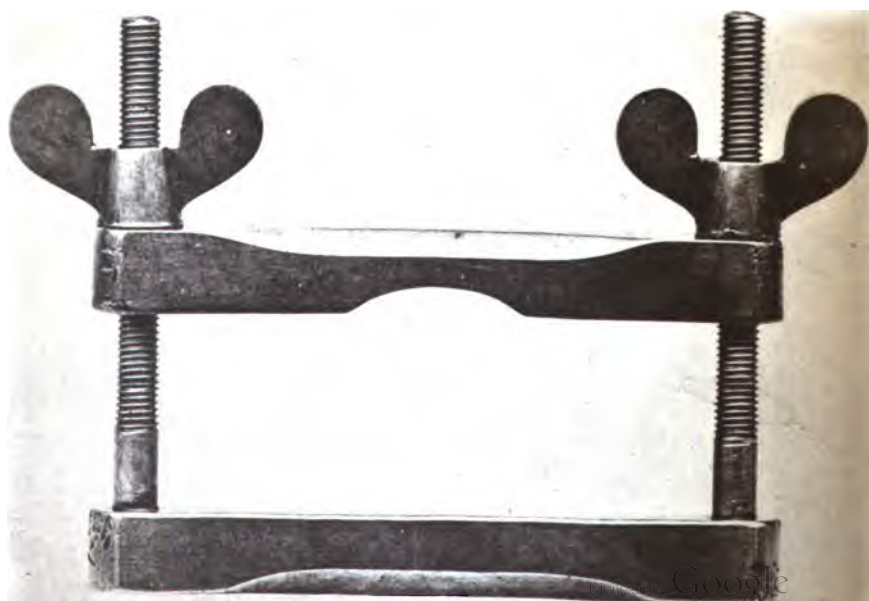


Fig. D.



Fig. A.



Fig. A.I.



Fig. B.



Fig. B.I.

THE
GLASGOW MEDICAL JOURNAL.

No. VI. JUNE, 1882.

ORIGINAL ARTICLES.

ONE HUNDRED AND THIRTY - EIGHT CASES
OF AMPUTATION OF THE SCROTUM FOR
ELEPHANTIASIS ARABUM.

By GEO. A. TURNER, M.D., C.M.
Late Medical Missionary, Samoa.

(Read before the Medico-Chirurgical Society of Glasgow, 7th April, 1882.)

(With Seven Photo-engravings.)

FOR the twelve years previous to 1880 I was resident in the Samoan group of islands in the South Pacific, as a medical missionary, and it was in connection with my work there that the cases which form the subject of this paper were met with.

Samoa is the name of a group of volcanic islands in Central Polynesia, situated between the parallels of 13° and 15° S. latitude, and 168° and 173° W. longitude. Elephantiasis arabum is extremely prevalent throughout the whole group, attacking natives and Europeans alike.

Shortly after arriving in Samoa I was applied to by a native to remove an enormous tumour of the scrotum, which hung down below his knees and very much impeded his walking. Being single-handed, and never having seen anything of the kind before, I naturally felt reluctant to attempt such a formidable operation. The man was so importunate, however, that I wrote to Sydney, N.S.W., to procure an aortic tourniquet, thinking that I could, by means of it, control the hæmorrhage, and so be able, even without any professional assistance, to perform the operation with some chance of success.

Such an instrument, however, could not be obtained for me in Sydney; and, before I could get one from England, H.M.S. "Cossack" called at Samoa, and in conversation with the staff-surgeon of that ship—now Deputy-Inspector General—Dr. G. V. M'Donough, I mentioned the case. It happened that Dr. M'Donough was a student in Dublin in 1844 when O'Ferrall's operation took place and witnessed it. Since that time he had not seen a case of the kind, but he at once professed his readiness to perform the operation. He also suggested the possibility of controlling the hæmorrhage by a clamp composed of parallel bars, with screws at each end, applied to the neck of the tumour. I subsequently found that the employment of such a clamp is advised in the earlier editions of Dr. Druitt's *Vade Mecum*, and possibly Dr. M'Donough got the hint from that source. An iron clamp of this description was kindly made for the purpose by the chief engineer of the "Cossack," and on the 9th July, 1872, the operation was performed. The man was probably about 45 years of age, but looked several years older on account of having to carry about with him continually such an enormous mass. The tumour measured 30 inches in circumference at the knees, and hung down nearly to the ankles. For about an hour before the operation the patient was kept lying on the operating table with the tumour raised considerably higher than his body for the purpose of emptying it as far as possible of blood, according to the suggestion first made, I think, by O'Ferrall. The clamp was then fixed in position, but not screwed down. Dr. Horner, the junior surgeon of the "Cossack," administered chloroform. As soon as the patient was thoroughly under its influence we screwed the clamp tightly down. Dr. M'Donough commenced the operation by dissecting up three rectangular skin flaps, one from the upper and front part of the tumour, and two lateral ones—the centre one to form a new covering for the penis, and the side ones to cover the open surface after the tumour was removed. The penis was then dissected out and held up on the abdomen. The cords were next cut down upon and tied, it having been decided not to attempt to save the testicles. In each case the whole cord was included in one whipcord ligature, according to the old method. The rest of the pedicle was severed by a few strokes of the knife. The clamp was then slowly unscrewed and the arteries tied as they showed themselves. About thirty required ligature. The flaps were then brought into position and secured. The clamp answered its purpose admirably, there being no bleeding during the operation,

except a little venous hæmorrhage from the tumour. The operation lasted about an hour, and during it the greatest difficulty we met with was to support the mass. This had to be done by a plank passed under it and held at each end by an assistant—the plank was naturally very much in the way.

The tumour, after removal, was found to weigh 77 lbs. A bed was prepared for the patient in my dispensary, to prevent moving him, and in order to have him at hand. Three days afterwards I had him taken to a house just outside my grounds. He was removed to make way for another patient of the same kind who was also desirous of being operated upon.

This second case was not nearly so large as the former, the tumour, after removal, not weighing quite 30 lbs. The operation was performed precisely in a similar manner to the first one, except that in this the right testicle was dissected out from the mass and retained. After the operation the patient was removed to a house close by the one where the first patient was. The wounds in both cases were dressed twice a day with a solution of carbolic acid in oil.

These operations were performed during the time that the Samoans were at civil war. On the 23rd July, exactly a fortnight after the first operation, and eleven days after the second, there was a sharp skirmish close to our premises. It was feared that one party would be driven right through the village, and the two patients, afraid to stay in their houses, *got up from their beds and walked up to my house for protection.* The panic was soon over. The men walked back again, and were none the worse. They both made a good recovery. The first, I have repeatedly seen since. After the operation he soon got quite strong and stout, and looked at least ten years younger than he did before it.

I have given the details of these two cases thus fully, as it was what I learned from them that gave me confidence to undertake similar cases afterwards, and laid the foundation for the subsequent success with which I met in the treatment of them.

On thinking over the matter afterwards, several improvements in the details of the operation occurred to me, and these I soon had opportunities of trying. The success of the two operations which I have described led many from all parts of the Samoan group, who were similarly affected, to apply to me for relief. In the eight years, 1872 to 1879 inclusive, I performed 136 of these operations, and I am fortunately able to show you photographs of several of these cases, which will give you a better idea of the nature of this disease, and of the

relief afforded to the sufferers by this operation, than any mere verbal description could convey.

In one of the earliest operations which I performed, and in which I used the iron clamp above described, there was considerable difficulty afterwards from retention of urine. This, I thought, might be owing to the prolonged severe crushing of the penis between the bars of the clamp. I therefore procured from Sydney a brass clamp, which I now show you (Fig. D) and which differs from the original instrument only in that it has a piece cut out of the centre of the upper bar, the object of which is, as much as possible, to get rid of the undue pressure on the penis. This clamp I have used in almost all my subsequent operations, and I have never had any trouble from retention of urine after its use.

In my earlier operations I had the bars of the clamp covered with chamois leather to prevent any bruising of the skin, but I soon found that when the clamp was tightly screwed down, it was almost impossible to prevent the leather round the upper bar from getting drawn into the screws, and so locking them, and causing much trouble when the time came for loosening it. I therefore discarded the leather, and used the clamp alone, simply taking care to have the edges of its bars carefully rounded so as to prevent any chance of their cutting the skin.

The inside measurement of the clamp when open to its widest extent is $5 \times 3\frac{1}{2}$ inches, and I may mention that in many of the cases it was barely possible, owing to the bulk of the neck of the tumour, to get the upper bar on and the screw to hold. In two or three of the largest ones this clamp was too small, and I had to use the iron clamp already mentioned, which, when open, measured $7 \times 3\frac{1}{2}$ inches.

I have already stated that one of the greatest difficulties we met with in the larger of Dr. McDonough's operations was to support the tumour, and yet keep it out of the way of the operator. With the view of obviating this difficulty, I had an operating table made with a leaf which was attached by hinges to the frame at its lower end. This leaf, when raised, projected about two feet beyond the end of the table, at a level of about six inches lower than that of the table itself. When raised it was firmly fixed by two iron supports made in the form of arcs of a circle. One end of each of these supports was attached to the leaf near its extremity at either side, and the other ends worked through iron staples attached to the inside of the legs at the foot of the table, and were fixed by means of thumb screws.

Let me now describe the various steps of the operation as practised by myself. The patient should be placed on the operating table at least half-an-hour before the operation, and lie quietly with the tumour raised considerably above the level of the body, that it may empty itself as much as possible of its blood. The upper bar having been removed, the clamp is then applied by raising the tumour and passing the screws up from behind on either side of its neck, the lower bar being held as far back towards the perineum as possible. The tumour is then turned down and the upper bar put on and fixed in its place by the thumb screws. These, however, at this stage, should only be applied to keep the clamp in position, and should not, in any way, interfere with the circulation in the tumour.

Before applying the clamp it is always well to make sure that no hernia exists; or if it does, that it has been wholly reduced.

The clamp being in position, chloroform is administered, the tumour still being kept elevated. As soon as the patient is thoroughly under the influence of the anæsthetic, the clamp is rapidly and firmly screwed down on both sides simultaneously. The tumour should now be turned upwards to expose its posterior surface. If it be small it may simply be turned upwards on the abdomen, its weight being supported by the hand of an assistant. In the case of large tumours some other contrivance is necessary, and I have been in the habit of using a couple of large hooks, like shark hooks, attached to a block and tackle fixed to the ceiling. These hooks are passed through the leathery skin at the lower part of the tumour, and by means of the tackle the whole tumour is raised so as thoroughly to bring into view its posterior surface. A rounded skin flap is then raised from the posterior part of the neck of the tumour, the horns of the incision being at either end of the lower bar of the clamp. This flap should be about $1\frac{1}{2}$ inches long in its centre, and should be dissected up close to the clamp.

The tumour is now lowered and allowed to fall forwards so as to rest upon the leaf of the table. To enable this to be done the patient should be drawn well down to the end of the table, and his legs from the knees downwards be made to hang down, one on each side of the leaf, and be fastened to the legs of the table.

Either two or three skin flaps should now be raised from the anterior surface of the tumour. If the penis be superficial, and not covered up by hypertrophied tissue, it will be sufficient

to raise a right and left rounded flap, having their outer ends at the right and left end respectively of the upper bar of the clamp, and meeting in the centre under the penis. Where the penis is buried in the mass of the tumour, as it often is, in addition to the right and left flaps just mentioned, a third should be made between the two, and as this central flap is made for the purpose of affording a new covering for the penis, care should be taken that it be formed of sufficient width to permit of its encircling that organ without any undue straining. The length of these flaps must be regulated by the probable bulk of the parts they will have to cover after the operation is completed. After dissecting up these flaps the penis is next dissected out. This is sometimes a matter of no little difficulty on account of the mass of hypertrophied tissue in which it lies buried. The best method is to start from the opening from which the urine escapes, which in some cases is found at the lowest part of the tumour, and from this boldly cutting upwards to expose the glans penis. This having been found, it is not difficult to dissect out the penis, which should then be held up on the abdomen, along with the anterior flaps, by an assistant. The next step is to find the testicles. These also, especially in the larger cases, are deeply buried in the substance of the tumour. The easiest and quickest way of finding these is to cut diagonally across the face of the tumour, first on the one side, and then on the other, and partly by the use of the knife, and partly by tearing the hypertrophied connective tissue with the fingers, they are soon discovered. They should then be dissected up with their cords and held well out of the way. This having been done, a very few strokes of the knife will sever all the remaining tissues constituting the neck of the tumour, and the mass is removed. The testicles should next be examined. In some, even of the largest cases, they are found to be quite healthy; and almost, if not quite, of natural size. In the majority of cases, however, there is more or less hydrocele on one or both sides, generally associated with very considerable thickening of the tunica vaginalis. I have always treated these hydroceles by freely incising them, and, where there was much thickening of the sac, excising a very considerable portion of it. In some cases, where there was excessive hypertrophy of the sac, I have removed the testicle on that side. The next step is to tie all vessels which are seen in the stump. In all my operations I have used carbolised catgut ligatures, which were cut close off and left to be absorbed. The next thing is slowly to unscrew the clamp, being on the watch to tie anything that bleeds. At

this stage of the operation, when sometimes a number of vessels show themselves simultaneously, I have found great advantage from the use of Dieffenbach's small self-holding forceps, which, while taking up very little room, control the hæmorrhage efficiently, and give the operator time to tie the vessels one after another. In most of the larger cases there are usually some 20 to 30, or even more, vessels which require ligature.

If it should happen in loosening the clamp, as has occurred to me on two or three occasions, that some considerable vessel, which has at first been overlooked, slips behind it and bleeds freely, the best plan is at once to unscrew the clamp and throw it off, trusting to speed in securing all bleeding points. Too great care cannot be taken to tie every point from which it seems possible that bleeding may occur, as neglect of this precaution may give rise to very troublesome hæmorrhage some hours afterwards.

After all the vessels have been ligatured, the flaps are brought into position, and united with wire or catgut sutures. It is well to put a drainage-tube on each side behind the testicles.

I have endeavoured in all these cases to carry out the antiseptic system of dressing as faithfully as possible. A 1-20 aqueous solution of carbolic acid was freely applied before the wound was closed, and antiseptic dressings were invariably employed.

Of the 136 operations already mentioned, the two largest were for the removal of the tumours here photographed (Figs. A and B). In both of these cases the tumours weighed almost exactly 80 lbs. They were weighed about an hour after removal, and after a good deal of blood and fluid had drained away. In the case of A, the tumour had been years in growing. When he stood up it reached almost down to the ground, and measured 40 inches in circumference. It will be observed that his limbs were all enlarged from the same disease. At the time the photograph was taken his right calf measured 36 inches in circumference, and the left one was only an inch or two less. In this case the testicles were both of natural size, no hydrocele; and they, with the penis, were preserved. The operation itself—formation of flaps, dissection of the organs out from the mass, and removal of the tumour—was completed in twelve minutes. The wound healed very rapidly, and the photograph Fig. A, 1, taken on the 28th day after the operation, shows the result.

In the case marked B, the tumour, which also was of several

years' growth, hung down nearly to the ankles, and measured 54 inches in circumference. The elephantiasis in this case was almost entirely confined to the scrotum, the left leg and foot being the only other part affected, and that only slightly. In this case there was hydrocele on both sides, the penis and right testicle were preserved, the left testicle being removed. The result, Fig. B, 1, was taken about six weeks after the operation.

The illustration, Fig. C, is interesting as showing the occasionally rapid growth of such tumours. The patient was a young man, about 20 years of age, otherwise perfectly healthy, and the tumour had grown in two years' time. C. 1 is an enlarged view of the same tumour. It weighed 54 lbs. after removal. The penis and both testicles were retained, and the patient made a good recovery; but I regret that owing to his having had, on account of the severe illness of a near relative, to return hurriedly to his home, which was in a distant part of the group, I was disappointed in getting a photograph of the result.

Of the other tumours removed one was over 50 lbs., three were over 40 lbs., and the rest were of various sizes, from about 7 or 8 lbs. up to 37 lbs.

In none of the cases was the penis removed, in none were both testicles removed, and in the great majority all the organs were preserved. In one case, in which the tumour was over 20 lbs. in weight, the wound healed almost entirely by first intention, and the patient walked home, a distance of several miles, within a fortnight after the operation.

On the 22nd December, 1874, I operated on four of these cases; on the 23rd on one; and on the 25th on one; and on the 26th January, the last of the six went home well.

Of the 136 cases I lost only two; on the 10th and 11th day after operation respectively. In the one case obstinate diarrhoea was the cause of death, and in the other, fever. In these cases the tumours weighed about 10 and 15 lbs. respectively. In two or three other cases, however, the patients were brought very low by diarrhoea or dysentery, although they eventually recovered. In one or two cases only was there partial sloughing of the anterior flaps.

The success which attended these operations I attribute mainly to four things:—1. The completeness with which hæmorrhage is controlled by the clamp; 2. The covering in of the wound with skin flaps; 3. The use of antiseptic dressings; and 4. The fine physique, and coolness, and powers of endurance of the Samoans. I have already mentioned

that the use of a clamp of this description was advised in the earlier editions of Druitt. But I am not aware that such a clamp has ever been used, at all events in the thorough way as was done by Dr. M'Donough and myself. Even Druitt, in speaking of the operation, after advising the use of such an instrument, says, "The great danger is the hæmorrhage which must be obviated by a rapid operation, and by plenty of ligatures. If the tumour is very large, the attempt to save the testicles, or even the penis, might be hazardous, and a clean sweep must be made."* And I find that in the last edition of the *Vade Mecum* all mention of the clamp has disappeared. In every case in which I have used it, it has proved thoroughly efficient in controlling all hæmorrhage.

In the last edition of Curling on *Diseases of the Testis*, Esmarch's method of controlling bleeding is recommended in these operations. But it is added, "In thin patients arterial hæmorrhage may be further controlled by compression of the aorta with the abdominal tourniquet." In two of my operations I made use of Esmarch's tubing, and it answered fairly well; but I prefer the clamp as the more effective method. In these cases, after the removal of the tumour, the elastic tube had a great tendency to slip off, and was only retained in its position with difficulty. But my greatest objection to it is that when it is employed the skin is drawn into folds, and the operation thereby rendered much more difficult. When the clamp is used, on the other hand, we have a flattened surface both anteriorly and posteriorly, which renders the operation very much more easy.

Another great advantage which is gained from the use of the clamp is that, after the removal of the tumour, it is easy to slacken the screws, half-a-turn at a time, so as to cause any vessels which have been overlooked to show themselves, the bleeding being easily controlled by tightening them up again.

The practice of forming flaps of skin for covering the wound has been objected to by some as tending to cause a recurrence of the disease. Sir Joseph Fayrer, for example, says, in his recently published work on *Tropical Diseases*, "No attempt should be made to preserve flaps of integument, which are unnecessary, and almost certain to be the seat of recurrence of the disease. In from two to four months all is closed in by cicatrix tissue, which gradually perfects itself, and is not liable to become the seat of recurrence of the disease." But, in the great majority of cases, it will

* *The Surgeon's Vade Mecum.* Ninth Edition. P. 665.

be found that the skin covering the neck of the tumour is healthy. It is skin which has been stretched and drawn down by the weight of the tumour from the perineum and pubes. Surely it is not contended that the state of the skin is the exciting cause of the disease; and why the preserving of a few inches of it more or less should increase the danger of its recurrence, I do not understand. Besides, if it be possible to cover up the necessarily large wound by skin flaps, its more rapid healing is ensured, and the danger of evil results thereby lessened. The formation of a posterior flap as the first step of the operation is, I think, of great advantage. It is done at this stage much more easily than if left to the last, when the bulk of the tumour, severed from its attachments anteriorly, would seriously inconvenience the operator. As already stated, it should be made short, so as to have the line of union well behind, in order to favour the escape of discharges from the wound. In some cases where I feared retention of fluids and bagging of the posterior flap, I have, when closing the wound, divided it in the centre, so as to ensure a thoroughly dependent opening.

The Samoans, who are of the Malayo-Polynesian type, are one of the finest native races to be met with in any part of the world, and their powers of endurance and coolness no doubt contributed largely to the success of these operations. One instance illustrative of this may be mentioned as quite unique in its way. One day, when I had made arrangements for the performing of three of these operations, one of the three patients asked permission to witness the operation before undergoing it himself. He stood quietly by, and carefully watched every step as performed on another, and after all was over, he took his turn on the operating table without the slightest evidence of any hesitation.

In describing the operation I have spoken of chloroform, but in almost all my cases I used the bichloride of methylene. I first used this anæsthetic on account of statements of Dr. Richardson, Mr. Morgan, and others, who claim that it is "less dangerous than chloroform," that "its action is more rapid," that "recovery is more prompt," and that "if dangerous symptoms show themselves during its administration, they subside sooner on discontinuing the inhalation." It will be easily understood that these advantages, if really possessed by it, were of the greatest moment to me, considering that, with very few exceptions, my operations were all performed with only the help of untrained assistants. I have been thoroughly satisfied with it, and never had any

difficulty in connection with its administration, though this was in almost every case done only by a native.

At a few of these operations I had the assistance of surgeons of British, German, and American ships of war that happened to be visiting Samoa at the time, but at the great majority of them the only assistance I had, besides that of natives, was that of a Mr. E. L. Hamilton, an American gentleman, who, though he had no professional training, rendered me very valuable aid.

In former times native surgeons occasionally operated on these cases, but all they attempted was to reduce the bulk of the tumour by taking a slice off it with a sharp piece of bamboo. Alarming hæmorrhage, and sometimes even death, from this cause followed these operations. They were not often performed, however, as the Samoans had a very wholesome law that, in surgical operations, if death took place within five days, the surgeon was looked upon as having caused the untoward result, and it was allowable to take his life in retaliation. I have sometimes been not a little amused at the friends of some one on whom I had operated coming to report to me, on the lapse of "the five days," that my patient was all right, thinking, evidently, that my mind would thereby be relieved!

ON THE PATHOLOGICAL ANATOMY OF TUBERCULOSIS OF THE FALLOPIAN TUBE.

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(*Read at the Glasgow Medico-Chirurgical Society.*)

THIS is a form of disease which, as yet at all events, is perhaps of more interest to the pathologist than to the practical physician, partly, no doubt, because of the great difficulty in diagnosing it, and partly also because, when present, it is often of secondary importance to the general state with which it is associated, or of which it is the result. As it is, however, an affection which is not very often seen (although by no means a very rare one), and as a more extended knowledge of

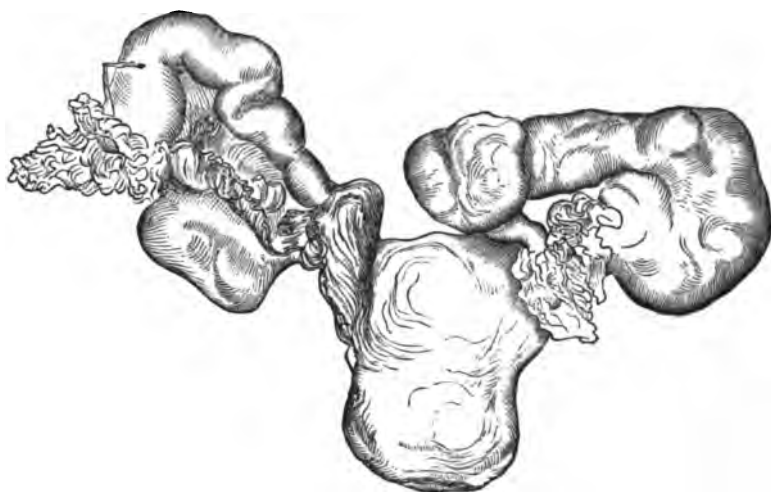
the morbid processes concerned may serve to throw light upon some questions in gynæcology, I have thought it right to record a case with which I recently met while acting as pathologist to the Western Infirmary in the absence of Dr. Coats.

The patient was a married woman, aged 37, who for a short time previous to her death had been under treatment in Professor Gairdner's wards. As the morbid state at present under review was not suspected during life, there is nothing in the ward journal which serves to throw any light upon the question at issue. The clinical history, therefore, need not be further dwelt upon, especially as the report of the *post-mortem* examination will give a clear idea of the nature of the case.

The body was examined upon the 18th of July, 1881, and the following is a note, extracted from the Western Infirmary Pathological Reports, of the conditions found:—There was nothing remarkable about the external appearances except great lividity of the face and lips. On opening the chest a small quantity of serous fluid was found in the pericardium. The heart was somewhat enlarged, weighing $10\frac{1}{2}$ ounces. The right side was considerably dilated, and the tricuspid orifice admitted easily four fingers. Some vital clots were found near the apex of the left ventricle. The left lung was found to be adherent in almost its whole extent, but it was pretty evident that the adhesions were of recent date, for at the base they consisted of little more than a gelatinous mass, while higher up they were distinctly fibrous, and contained gelatinous material in their meshes. On removing the left lung and cutting into it, the whole upper lobe and part of the lower were seen to be sown with scattered patches of condensation of a greyish colour, and here and there the commencement of cavities was noted. The right lung was also very adherent, but the adhesions were of older date than those upon the left side. The lung itself was solid throughout, and cut like a piece of cheese, except at the apex, where the condensation was more scattered, on account of the presence of distinct cavities, which were filled with pus. On opening the peritoneal cavity a quantity of clear serous fluid escaped. The surface of the liver was seen to be covered with a flaky exudation, and was adherent to the diaphragm by loose semi-gelatinous fibres. In the peritoneum, covering the posterior part of the liver, a number of small, yellow, caseous looking nodules was discovered. The liver itself presented normal appearances, and weighed 48 ounces. The kidneys were normal and weighed—the right, $6\frac{1}{2}$ ounces, the left, $5\frac{1}{2}$ ounces. The spleen was slightly enlarged, weighing

7½ ounces, and its surface was adherent in the same way as that of the liver and presented a similar exudation. The mesenteric glands were greatly enlarged, and some of them highly caseous. There was no matting together of the intestines, and a careful examination of their mucous and serous surfaces was negative. The peritoneum covering the uterus was roughened, and small bodies were detected in it presenting the characters of tubercles. What was at first sight taken to be a peculiar tumour of the left ovary was noted; and the uterus with its appendages, and also the mesenteric glands, were removed for more careful examination.

From the report of the *post-mortem* examination it will at once be seen that the case was evidently one of widespread



tubercular disease, affecting principally the lungs, mesenteric glands, and the generative organs; and in what follows I shall endeavour to give a clear account of the condition of the latter organs, and trace their connection with the general state.

The uterus, right ovary, and right broad ligament, in which the parovarium could be well seen, presented normal characters. The uterus, after being in spirit for some months, measures 2 inches from fundus to os, 1½ inch in breadth, and ½ inch in thickness, which, allowing for the shrinking which takes place in spirit, may be said to be normal. Its walls are about ¼ inch in thickness, and on removal of the anterior wall, no abnormality of the mucous membrane can be detected. The right ovary is of the usual size, and on

section presents a healthy appearance. In fact, the whole morbid process seems to be entirely confined to the left uterine appendages and the right fallopian tube.

The right Fallopian tube, near its fimbriated extremity, is considerably dilated, and is slightly tortuous, or twisted upon itself. It is about 5 inches in length, and the fimbriated extremity is non-adherent and of normal appearance. The appearances of the left uterine appendages are now seen to be due to an exaggerated condition of the same state of matters found upon the right side, and not to an ovarian tumour, as was at first supposed. The swelling here, which is the size of a large walnut, is found to be continuous with the Fallopian tube, which is so much enlarged, and so twisted upon itself as to obscure the situation of the ovary altogether. Upon careful dissection the left tube is found to measure about 7 inches in length, and varies from about $\frac{1}{2}$ to 1 inch or more in diameter. In shape it somewhat resembles that of a young foetus, the part representing the head being situated at the extreme distal end of the tube. As the uterine end is approached, the swelling gradually diminishes in size until, where it joins that organ, it is normal. The fimbriated extremity is quite altered, owing to adhesions having taken place between it and the ovary, the situation of which, as has been said, was at first quite obscured by the convolutions of the tube, and, on attempting to separate them, the interior of the tube was exposed, and its caseous contents revealed. It was now discovered that the great enlargement of the organ was due to the cavity of the tube being packed full of, and distended by, solid caseous matter. While endeavouring to dissect out the ovary, a cyst was accidentally ruptured and a light coloured granular fluid discharged. The cyst was situated on the anterior and upper aspect of the ovary, near where the tube was adherent to it, and was at first thought to be ovarian. On more careful examination the cyst was seen to be situated not in the ovary itself, but between the surface of the organ and its peritoneal covering. The walls were thin and membranous, and on being thoroughly opened, it was found to be about quarter full of a yellow caseous material similar to that contained in the tubes. The floor of the cyst was composed of the smooth rounded surface of the ovary, and on making a section of the organ it presented normal appearances.

It is further to be noted that the serous surfaces of both Fallopian tubes, but more especially the left, were studded over with numerous little white nodules, exactly similar in appearance to the tubercles seen on the serous coat of the

bowel in cases of tubercular ulceration. Similar nodules were seen in the fresh state on the surface of the uterus, but now, after preservation in spirit, they cannot be seen.

Having thus given an account of the naked eye appearances, it remains for me to consider the question of the microscopic anatomy of the parts concerned. The mesenteric glands, the wall of the uterus, the Fallopian tubes, and the contents of the cyst were made the subject of a careful microscopic examination. On cutting into the mesenteric glands many of them were found to be nearly caseous throughout. On microscopic examination the capsule of the gland could be easily seen, and beneath it there was a distinct layer of inflammatory formation, which gradually merged into the central caseous mass. The cellular elements absorbed staining material greedily, and in some places were seen to be prolonged towards the interior of the gland, evidently along its trabeculae. The uterine wall presented healthy characters, and nothing abnormal could be seen in the mucous membrane, which consisted of layers of very small epithelial looking cells, but its glandular structure could not be well made out.

The Fallopian tubes were next examined. Sections of the left were made at two points—viz., near the uterine end, and near the distal extremity, the former including what was supposed to be the most recent part of the disease, the latter passing through two of the tubercles on the serous coat. The serous and muscular coats of both tubes presented normal appearances, but the mucous membrane was entirely replaced by a thick layer of round-celled (inflammatory) tissue, which, as in the case of the mesenteric glands, merged into the caseous mass which occupied the lumen of the tube. This layer was not prolonged into the muscular coat to any extent. These remarks apply to both tubes with the exception that in the right the whole process seemed more recent. On examining the nodules on the serous coat each was seen to consist of a minute oval mass of round-celled tissue, which had become caseous in its central parts. The cells composing the margin of the little nodule absorbed colouring matter greedily, while the central portion stained very little. It will thus be seen that in the present case the morbid processes are mainly confined to the mucous membrane of the tubes, and do not involve their other coats to any very appreciable degree.

Having thus described, as carefully as I can, the naked eye and minute anatomy of this case, I have now to refer for a little to the general question, and see what conclusions may be drawn from the facts recorded above.

From the literature to which I have been able to gain access I find that tuberculosis of the Fallopian tube pure and simple is a somewhat rare affection, but that it is much more common to find it associated with a similar condition of the uterus. Many of the books do not mention tuberculosis of the Fallopian tubes at all, or if they do, pass it over in a cursory manner. Thus, Dr. Grailly Hewitt says, "Tubercle of the tubes has been met with, as also cancer."* Dr. Churchill, in speaking of chronic inflammation of the Fallopian tubes, says, quoting from Nauche, "It is undoubtedly to this kind that we ought to refer *melanotic and tuberculous diseases*."† Many of the works on gynaecology do not describe the condition further than this, but in Dr. Barnes' work on *The Diseases of Women*, and in certain pathological books, I find more detailed accounts. Barnes says that tuberculous disease of the Fallopian tubes is usually associated with tubercle of the uterus and ovaries, and that tubercular disease has never been found in the ovary alone. "When the tubes are affected they become enlarged distended sausage-like tumours on either side of the uterus, resembling in shape the tubes affected with dropsy, but differing in being more solid." Dr. Bristowe and Mr. J. Hutchinson showed cases to the Pathological Society of London.‡ In Mr. Hutchinson's case there was extensive disease in the interior of the uterus as well. In Bernutz and Goupil's description of the frequency of tubercular disease of the female generative organs, the following occurs. "In some cases the Fallopian tubes alone are diseased . . . and though the contrary opinion is generally entertained, I believe that the oviducts are more frequently affected than the ovaries themselves."§ Rokitsky says, "Tubercle of the Fallopian tubes (Fallopian mucous membrane) is generally associated with uterine tubercle; but it is remarkable that it sometimes occurs independently of the latter, or in a condition of higher development." He also thinks that in many cases of tubercular affections of the internal sexual organs the mucous membrane of the fallopian tube is the primary seat of the disease."|| Orth¶ says that

* *The Diseases of Women*. London: Longmans. 1872.

† *Diseases of Women*, p. 488. Dublin: Fannin & Co. 1864.

‡ *Pathological Transactions*, vol vi, p. 276; and vol. viii.

§ *Clinical Memoirs on the Diseases of Women*, vol. ii. London: New Sydenham Society. 1867.

|| *A Manual of Pathological Anatomy*, vol. ii, p. 326. London: New Sydenham Society, 1849. Also *Pathol. Anatomie*, 3rd ed., 1861. Vol. iii, p. 498.

¶ *Diagnosis in Pathological Anatomy*. Orth, American Trans. Boston: 1880.

the appearances of tuberculosis in the Fallopian tube are the same as those it presents when it attacks the uterus, and that "the changes from tuberculosis are always further advanced in the tubes than in the uterus." Klebs also describes this affection at some length, and refers to Rokitansky's opinion that tuberculosis of the genital organs is usually primary in the Fallopian tubes, and spreads from them to other parts.*

From the above short outline of the literature of the subject it will be seen that the affection, though well recognised, is by no means a very common one, and that as a rule it is associated with tubercular disease of the uterus, and usually also with a general tubercular state. Rokitansky, as has been said, considered that in many cases of tubercular disease of the female sexual organs, the primary disease was situated in the Fallopian tubes. The study of the present case must, I think, be regarded as confirmatory of this view. In it, so far as could be made out, the disease is strictly limited to the Fallopian tubes, and to the peritoneal covering of the left ovary. That the disease began in the tubes is also borne out by the fact that it is most advanced towards the fimbriated extremity of both tubes, where it is associated with the presence of small tubercles on the serous coat. The tubercles also prove the essentially tubercular nature of the disease of the mucous membrane, and may be looked upon as similar to the tubercles which appear upon the serous coat of the bowel in cases of tubercular ulceration of the intestinal mucous membrane. The case further shows that very advanced tubercular disease of the Fallopian tubes may exist without implication of any other part of the generative system. As regards the source of the disease, it is easy I think to see how the Fallopian tubes should be primarily affected in the present instance. By their fimbriated extremities they communicate freely with the cavity of the peritoneum, and thus will be extremely liable to catch up any morbid infective material that might be present in it. As has been seen from the report of the *post-mortem*, there was well marked tubercular peritonitis, with both serous and fibrinous exudation, and nothing is more likely than that some of this may have been sucked into the Fallopian tubes, and so infected their mucous membrane. Thus, as has been remarked at the outset, the clinical significance of the present case is subordinate entirely to that of the general state with which it is associated. But we know that tubercular disease is often localised and limited to certain organs, and therefore there is

* *Handbuch der Pathologischen Anatomie*. Klebs. Band i, Abth ii, p. 847. Berlin. 1876.

nothing unreasonable in our supposing that a localised tuberculosis, either of the Fallopian tubes or of any other part of the uterine system, may take place primarily, and without there necessarily being grave tubercular lesions elsewhere. In such cases, as in all cases of obscure disease, the possession of an accurate knowledge of the pathology of the affection will greatly assist us in forming an opinion, and enable us to found the treatment on a rational basis.

ON THE CLINICAL HISTORY AND DIAGNOSIS OF HÆMATOMA OF THE DURA MATER.

By JAMES FINLAYSON, M.D.,

Physician and Lecturer on Clinical Medicine in the Glasgow Western Infirmary.

A GENTLEMAN, 60 years of age, came first under my notice on account of a renal affection of some years' standing; the urine was slightly purulent, there was a history of pain over the left kidney, and of various attacks of hæmaturia many years before, and the whole features of the case pointed to the existence of calculous pyelitis. The health, however, was not impaired, and there was but little local discomfort.

Some time after this he consulted me regarding a severe headache, from which he had suffered for a few days. He said that on 27th June he had fallen asleep for a little time, while lying on a hillside at the coast, and he thought that he had caught cold. On 30th June and 1st July he suffered from headache of great intensity, and on the latter of these days his wife noticed a lividity of his face which alarmed her, and made her fear that he was taking an apoplectic fit. Various remedies were tried to relieve the headache, but the only relief obtained was from the application of hot fomentations to the head, which lessened the pain at the time. There was very slight sickness, with some retching, but no paralysis, and scarcely any mental disturbance further than might be due to the pain itself. The urine, although still slightly purulent, was in no way worse, rather better, than before; albumen was scarcely to be detected, the reaction was acid, and the quantity and specific gravity normal. A slight improvement having occurred after the first two days, he had come home from the coast, and during the next fortnight the frequency and severity

of the headache had abated very considerably, and he had even been able to walk out a little distance. The treatment adopted was the use of saline purgatives and 15 minim doses of nitro-hydrochloric acid in carbonated water; he was also placed upon light diet, and was directed to avoid sleeping after meals, to which he had a decided tendency.

The improvement referred to continued till 18th July, when drowsiness became very prominent; and on the following day it existed to such an extent that he could scarcely be wakened up, but when aroused he could walk, in a staggering way however, and complained much of headache. A blister was applied to the nape of the neck, but the sopor deepened, and on the following day (20th July) he could not be roused at all, and passed urine in bed. Towards night a shivering occurred (associated with a temperature of 105° F.), and there was, for a little, some brightening of the intelligence; but the sopor returned, and he continued in this state all night. In the forenoon of the next day (21st July), just at the visit, he had another shivering, with high temperature as before, and this was again coincident with a return of intelligence, which was almost complete, and he then complained of no pain except at the site of blister. The urine, when examined, was found in the same state as before.

The diagnosis at this point was involved in great obscurity. When the head symptoms first appeared, suspicion was naturally directed to the kidneys, as he was known to be affected with pyuria, but when the urine was examined and found to be less purulent than before, when the quantity and specific gravity were ascertained to be normal, when no fresh renal symptoms or signs could be ascertained to exist, and when it was considered how clearly the history pointed to an unilateral calculous affection of the kidney, the idea of the renal origin of the headache was deliberately put aside. The heart was not affected, so far as could be made out; the opinion entertained by myself and by the medical man in charge of the case was that the headache was due to some cerebral affection, allied in its nature to apoplexy; the age of the patient, the marked lividity at the outset of the attack, and a slight rigidity of the arteries were held as confirming this view. The deepening of the sopor tended to confirm our opinion, but the slight brightening of the intelligence on the night of the 20th, and the complete way in which this occurred on the following forenoon, were extremely puzzling in this view of the case. The coincidence in point of time of both of these improvements, with shiverings and fever, was quite inexplicable; and the

cause of the shiverings was almost equally obscure, as no tenderness existed over the kidneys, and no fresh indications of renal disorder had supervened. At this point another physician was asked to see the patient along with us, and as his first visit happened to coincide with the second rigor, and the sudden and complete restoration of the intelligence for the time, he naturally raised the question of the headache and sopor having been due to uræmic poisoning; the somewhat sudden supervention of the comatose state and the very sudden disappearance of it no doubt favoured this view, while the shiverings were supposed to be due to the suppuration known to be going on in the kidney. While admitting the plausibility and possible correctness of this view, having watched the case from nearly the beginning, I could not depart from the view entertained as to there being some distinct and definite cerebral lesion.

The improvement mentioned continued during the 21st and 22nd July, the patient being very bright and quite like himself in his appearance and remarks. Towards the evening of the 22nd the soporose state returned to some extent, and it was again very marked on the 23rd. No further shiverings had occurred, but the patient seemed to feel cold. The pupils had been observed to be a little unequal on the 22nd, but this had passed off on the 23rd.

For the next two or three days the soporose condition continued, and was very deep on the 25th, when the pulse fell to 50 beats, or even less, in the minute; during this illness the usual rate had been from 60 to 66, apart from the febrile periods after the shiverings, and the normal rate in health was about 68. On 26th July he had a violent attack of pain in the head, causing him to cry out loudly; this was the only return there had been of this severe pain since the beginning of the illness. There was likewise at times a tendency to sing and whistle little snatches of tunes as if delirious, and some loose motions were passed unconsciously. No vomiting had occurred, and there was no paralysis.

The next new feature in the case was noted on 29th July, when the breathing was observed to be irregular, changing from a noisy, almost stertorous, character to an action so slight and quiet that it seemed several times as if it might stop altogether, and then regaining its fuller and noisy character as before. The pulse at this time usually remained under 60, often 50, and the temperature was normal.

Slight quiverings or twitchings were noted on the 28th and 29th July, these affected chiefly the right arm, which

seemed once or twice to be involved in a distinct spasm, and some twitchings at the chin were likewise noticed. Although still very sleepy he could be roused to answer questions, in a hazy manner however; his pupils while asleep were contracted, but on rousing him and directing them to the light they became natural. At this time he became difficult to manage as to feeding, as he would not swallow; he kept a mouthful of food for some time and then spat it out; nutrient enemata were therefore tried.

On 30th July, in the forenoon, the respirations were noisy, or even a little gurgling in character, and associated with some heaving of the chest; the urine had been passed in bed, and no period of consciousness had been observed since the previous morning. Pulse, 86; respiration, 25; temperature, 99.2° F. at midday. At 2 P.M., temperature, 100° F.

At 4 P.M. on the same day a severe but brief general convulsion supervened, affecting both sides of the body, and the bowels acted during the fit. About this time the temperature was 106° F., and the pulse 134.

In the evening, about 7 P.M., a copious discharge of purulent matter began to issue from both nostrils. It was exceedingly difficult to estimate even roughly the quantity of pus, as it was frothed up to the most extraordinary extent, and it presented an exceedingly voluminous appearance as it came out in globular forms resembling large soap bubbles. A guess was made that it must have amounted to an ounce. At the same time, the respiration became very bad and gurgling, and the patient was of course quite unconscious. At 8.30 P.M., temperature, 105°; pulse, 114; respirations, 40. No further convulsions, or other accidents, supervened, but death occurred at 1.45 A.M.

For a few days before the discharge of pus from the nostrils occurred, the correctness of the diagnosis of some cerebral affection seemed perfectly clear; the unequal pupils, the slow pulse, the occasional twitchings and spasms of the right arm, all pointed strongly in this direction, and some suspicion of a cerebral abscess began also to be entertained, as this view of the case afforded an explanation of the two violent shiverings. Although certainly an unusual combination, the suppuration known to be going on in the kidney might be supposed to have determined a secondary abscess in the brain, even in the absence of any evidence of aggravation of the renal mischief. This view was even further strengthened by the occurrence of general convulsions, and when the discharge of pus from the nostrils occurred two or three hours after

the fit, the idea was at once suggested of some rupture of a cerebral abscess through the bone into the nasal cavity. The evidence, indeed, seemed so strong that I would not have hesitated to sign the death certificate to this effect, although, as the facts showed, this would have been erroneous.

The *post-mortem* examination was made by Dr. Joseph Coats. It revealed the existence of a uric acid calculus in the left kidney, which also presented a slight dilatation of the pelvis. There was likewise the evidence of an old affection of the pleura on the right side.

On examining the brain there was found the lesion described under the name of hæmatoma of the dura mater, with a very definite membrane, and various hæmorrhages which had evidently been frequently repeated. Its position was chiefly on the right convexity, but it involved the left also to some extent. There was no lesion of the substance of the brain, and only slight evidence of atheroma of the arteries at the base.

As the cerebral lesion discovered gave no indication of the origin or source of the pus observed to issue from the nostrils, a prolonged examination was made of the nasal cavity by means of the fingers and probe; and the frontal ethmoidal and sphenoidal sinuses were broken into and explored, without finding any evidence of suppuration, so that the source of the pus had to be left undetermined.

Some time afterwards, however, a new light was thrown upon this part of the case. An ophthalmic surgeon who had attended this gentleman a few months before, told me that he had treated him then for a lachrymal obstruction which was supposed to be due to some affection of the bone. The shiverings, therefore, were probably connected with the formation of an abscess in connection with this lachrymal disorder; and the violent general convulsions, due to the cerebral affection, had no doubt caused or hastened the rupture of this abscess, as the pus appeared externally about three hours after the fit. The situation of such an abscess would explain our missing any trace of its presence, even after the very thorough exploration described, as of course the idea of lachrymal obstruction had not in any way been suggested to us by the history or symptoms so far as then ascertained.

Inquiry after the *post-mortem* examination failed to discover any definite evidence of marked changes in the mental character of the patient, although it was supposed that he had not been quite the same as formerly for a good many months. It is quite certain that he had been able to engage

in important work, as usual, up till a week or so before he was laid aside, without any one having remarked a decided difference in him; nor was there any history of a previous illness with cerebral symptoms.

The case is one full of instruction as regards the diagnosis. It presents an interesting specimen of this affection in a form comparatively uncomplicated, so far at least as the nervous symptoms were concerned; and the clinical history is deserving of attention in connection with the question of the pathology of these membranous and hæmorrhagic formations; the previous health of the patient was such as to preclude the idea of any extensive hæmorrhage having led up to the formation of the membrane discovered, which was evidently of a date long anterior to the first attack of headache referred to.

Very different in many respects were the course and history of other two cases of this kind under my care in the Western Infirmary. Both of these were characterised by extensive hæmorrhages arising, certainly in the last case, and probably in the other also, from minute aneurisms in the cerebral arteries. In the second of the following cases the terminal extensive hæmorrhage and the old clot afforded pretty clear evidence of the formation of the membrane from previous smaller hæmorrhages which had been going on for some considerable time before admission. The symptoms were such in this case that I was led to announce to my clinical class, as a plausible, though by no means certain diagnosis, the existence of *pachymeningitis chronica hæmorrhagica*, terminating in extensive cerebral hæmorrhage.

In the first of the two cases which follow, the symptoms of any extensive cerebral hæmorrhage were by no means clear, although the lesion, as it proved, was very extensive; and it occurred to me after the *post-mortem* examination that the chronic pressure on the brain, from the meningeal lesion, might account to some extent for the modification or masking of the symptoms due to the recent sudden and extensive hæmorrhage.

A hammerman, 49 years of age, was admitted to the Western Infirmary on 5th January, 1877. He had been seized the previous evening with paralysis of the left side. This attack was sudden, but was not associated with any loss of consciousness, although he appeared somewhat dazed at the time of the seizure. It appeared from the statements given by his friends that, while always of a dull disposition, he had become notably

worse in this respect for a month or two before the attack. He had, however, never complained of headache.

On admission he did not seem to be aware of the paralysed state of his left arm. He could count fingers held up quite well with either eye, and his power of answering was pretty good, so far as speech was concerned, but his answers betrayed the greatest confusion of ideas and memory. His pupils were of natural size, and responded well to the stimulus of light, and there was no ocular paralysis.

His pulse was usually slow, numbering only 54 to 60 per minute. The arteries were apparently slightly rigid, but no evidence of cardiac disease was obtainable.

During the five days he lived in the wards he was sometimes drowsy, but his state was more often characterised by restlessness; there were frequent restless movements of his right hand, and a tendency to put his right leg out of bed. The bowels were somewhat obstinately confined; there had been no vomiting during the illness, and the patient could swallow, but appeared to object to taking much at a time. The day he died there was some screaming, but this may have arisen in connection with pain in the bowels, as they were acting then after purgatives. Before death some spasm or convulsion of the paralysed arm was noticed by the nurse.

It was reported on admission that the patient had for some time been troubled with very frequent urination, a symptom which had perhaps its explanation on the detection at the *post-mortem* examination of a very large cyst in the left kidney. This was filled with yellow transparent fluid, and had destroyed the renal tissue, but it had no direct communication with the pelvis of the kidney. The urine was found albuminous on the first day after admission, but on subsequent testing this had disappeared, so that probably this symptom was connected with the sudden paralytic attack.

The *post-mortem* examination showed a small quantity of clot in the longitudinal sinus. The internal surface of the dura mater, over the convexity on both sides, was lined with a vascularised membrane, which in many places was in several layers. Between the layers numerous hæmorrhages were found in patches, sometimes small, sometimes large, the largest being on the right side, and occupying the posterior half. These clots were covered by such a delicate membrane as to appear at first sight as if on the surface. The clot was nowhere thicker than a line or two at the most, and did not seem to compress the brain to any great extent.

In the *left* lateral ventricle there was excess of fluid of a

blood stained appearance. The *right* lateral ventricle was filled with clot, and there was a large rent in the floor. The rent formed part of a cavity filled with blood clot and broken down nervous tissue. The anterior extremity corresponded with the anterior extremity of the optic thalamus; the bulk of the cavity being in the optic thalamus, and between it and the corpus striatum; the nuclei of the latter were, however, hardly involved at all. On the other hand, the cavity extended through the optic thalamus, and partly involved the crus cerebri. On careful examination of the wall of the cavity, a small solid body about the size of a split pea was found attached to an artery of some calibre. The fourth ventricle also contained some blood clot. The dura mater at the base was very distinctly hyperæmic, and in almost every part there was a layer of false membrane on the internal surface.

Some hypertrophy of the left ventricle of the heart was found, and the left kidney contained a large cyst.

A carter, 30 years of age, was seized somewhat suddenly, on 29th December, with pain in the head, after having been out working all night, and at same time he vomited his breakfast. There was no history of any injury to the head. The severe headache continued, and kept him confined to bed; sometimes it became very severe. On 1st January he began to suffer from pains in the arms, legs, and loins. He continued to be very restless, sleeping badly, and apparently, at times, feverish and delirious. On 9th January he had, for the first time, a distinct convulsive fit, with unconsciousness. After this, although consciousness returned, he was for three or four days rather stupid and slightly delirious, and on admission to the Western Infirmary on 15th January, he was still restless, sleeping badly or only in short snatches, complaining much of his head, and at times moaning, as if in severe pain; the pain was referred chiefly to the right side of the head. The pain in the back and in the thighs was still present on admission, and this pain was aggravated on moving; he was, however, still able, when asked to do so, to get out of bed and to stand, although this was done slowly, and apparently with considerable pain, but no unilateral paralytic affection could be detected.

His cheeks were rather flushed, but there was no congestion of the conjunctivæ. The pupils were unequal, the right being almost always larger than the left. His mind was evidently somewhat confused, although he could usually answer questions.

Early on the morning of 18th January he had three slight

convulsive fits, lasting only a few seconds each, and all within five or ten minutes; the right arm was apparently most affected by the movements. After this had passed off he was a little more confused than usual in his mind. In the afternoon of the same day he had another fit, but it could not be ascertained that it was unilateral; the fit was associated with, and followed by, deep unconsciousness, and he passed urine and fæces in bed during his attack. Immediately after he recovered, the grasp of the left hand appeared distinctly enfeebled as tested then, although it recovered quickly. Early next morning he had a succession of three convulsive fits, all associated with unconsciousness, and followed by stertorous breathing, with a certain amount of delirious excitement following this stage, in which he threatened to strike the attendants. The last two fits were more prolonged than the first, and the last was seen and watched by the resident assistant. His face became fixed and slightly distorted, the face being drawn to the *right* side; both eyes were then turned to the extreme left for a very short time, as if looking fixedly in that direction, the limbs then became convulsed, the right twitching or moving about and the left being slightly rigid. Urine was passed in bed during this attack, which, with the period of unconsciousness, lasted three-quarters of an hour. Much confusion of mind followed this seizure, but no maniacal excitement.

At the visit, on 19th January, a few hours after the fit described, he was found to be able to use both arms, and the grasp was about equally good; but immediately after the fit it was noticed that he lifted the left hand with the right as if it were powerless. The right pupil was still found to be larger than the left. Although no distinct squint existed, the movements of the right eyeball were supposed to be a little impaired, and a pretty distinct droop of the right eyelid could now be recognised. No deviation of the tongue existed. Since the fits occurred, headache has been much less complained of, but of course his intelligence has been less acute also.

During his stay in the wards the temperature was but little elevated, 100·2° being the highest noted. The pulse was usually rather rapid, ranging from about 80 to 100 or more, without any intermission in the beats. No affection of the heart or lungs could be recognised. The urine was tested repeatedly, but no albumen or sugar was found. The tongue was pretty clean, and the bowels regular. Vomiting seems to have occurred only once during his illness. A small bed sore

on the left side was noticed on admission, and required attention while in hospital.

The treatment pursued was chiefly by the administration of iodide and bromide of potassium, and a blister was applied to the right side of the head.

The terminal seizure came on suddenly on the afternoon of the 19th January. He had been somewhat stupid all day, calling out frequently, as if addressing his wife; but in the afternoon the breathing became suddenly worse, and divergent squint could be recognised. No convulsive symptoms appeared, but the laboured breathing and lividity became extreme; although the breathing frequently seemed as if about to stop, he lingered for four hours. During this attack the temperature was not taken owing to his extremely critical state.

Post-mortem report by DR. COATS.—The scalp and calvarium present nothing remarkable. On exposing the dura mater, a dark coloration was seen on the right side, deepest over the temporal region, and next to that in front, while it shaded away behind. This was clearly due to blood beneath the dura mater. On reflecting this membrane, the blood was found in the form of a brown soft layer obviously altered. A distinct layer of false membrane could be separated from the surface, but this did not present any appearance different from an altered blood clot. On removing the brain the blood lining the dura mater was seen to extend to the base, and was particularly abundant in the temporal fossa, but confined to the right side.

At the base of the brain there was recent blood in the sub-arachnoid space, somewhat sparse over the convolutions of the right side, but more abundant over pons varolii and medulla oblongata, where it proceeded to the left side. The blood on right side of pons and medulla formed a continuous layer, especially at the upper part of medulla. The third nerves emerged from parts covered with blood, especially the right.

A large cavity filled with blood occupied the right temporo-sphenoidal lobe, and the blood had passed into the lateral ventricles where large elongated clots were found, that in the right being the bulkier. On opening up the cavity containing the blood and removing the dark gelatinous recent clot a hard mass was reached, forming an irregular aggregate of what appeared to be older condensed clot. This was related to a thin walled aneurism which occupied the angle formed by sylvian artery and posterior communicating. This aneurism was about the size of a pea, and was found to communicate with the irregular mass described above, which was found to

be hollow with a smooth interior surface. This again was in open communication with the large mass of clot. Another aneurism was discovered in connection with the anterior cerebral. It occupied the angle between the right anterior cerebral and the anterior communicating. There was no rupture of this aneurism.

The heart presented nothing remarkable, and in particular there was no valvular disease. It weighed 11 oz.

The liver, kidneys, and spleen, were normal.

A CASE OF RHEUMATIC FEVER, WITH HYPER-PYRETIC TEMPERATURE.

BY WILLIAM A. M'LACHLAN, M.D., DUMBARTON.

Mrs. M——, aged 40—married, sterile, with a fairly good constitution, had been ill with polyarthritic rheumatism for about ten days previous to my seeing her, and had been treated with salicine in 15 gr. doses every two hours for the twenty-four hours previous to my first visiting her.

I was called to visit her on the 17th February, 1882, about 1:30 P.M. On making enquiry as to her present condition, I learned that she had been slightly delirious during the previous night, and that the delirium had been gradually increasing in severity up to the present time.

On my examining her I found her skin dry and unperspiring. Her temperature was 107° F., and her pulse 160 per minute. There was a ventricular systolic murmur over the præcordia of a harsh nature. She was violently delirious. Face much flushed. Carotids not throbbing. Eyes not much suffused. Tongue dry. Bowels confined. Urine scanty.

The treatment consisted in removing her from bed and laying her on the floor between a pair of blankets, which had been wrung pretty dry out of cold water. Her chest and abdomen were covered with towels thoroughly saturated with cold water, and the thermometer placed in the axilla. In a few minutes, after being put into this pack, she fell asleep and slept for nearly a quarter of an hour. In half-an-hour, her temperature was 104° F. The towels were then changed and re-moistened, and again placed over the chest. In another half-hour

her temperature was 102° F. She was then removed to bed, was quiet and calm, and had the following:—

R Quinise sulph., gr. xx.
Sodii salicylatis, gr. x.
Pulv. opii.
Pul. digitalis aa gr. i. M.
Fiat charta i.

One every four hours till the following morning.

18th Feb.—Passed a fair night. Slept about six hours. Temp., 101·2° F. Pulse 98. No cardiac murmur. Complaints of rheumatic pains returning to her joints. Bowels have acted. Tongue moist and covered with a yellowish-grey fur. Urine scanty. Skin covered all over with a profuse miliary rash. She is very deaf, and has the buzzing of cinchonism. Ordered the joints to be fomented with an alkaline lotion; internally to have soda salicylate and potass. bicarb., gr. xv of each every three hours.

19th Feb.—Passed a fair night; slept well. Bowels acted. Tongue clean. Urine more abundant. Temp. 100·8° F. Pulse 98. No endo- or exo-cardial murmur.

20th Feb.—Articular pains much less. Bowels loose. Urine in fair quantity. Temp. 100·1° F. Pulse 98.

21st Feb.—Temp. 100·1° F. Pulse 96. Slight diarrhoea.

22nd Feb.—Temp. 98·8°. Pulse 72. Diarrhoea gone. Urine abundant. Digestion weak.

From this date convalescence was established, although for fully four weeks occasionally subacute pains in several of the articulations, and in various parts of the muscular system were present.

Note.—In this case the therapeutic property of the cold wet pack in acting antipyretically was well marked. Its power of quieting nervous irritability was no less manifest, the patient almost immediately falling asleep, and waking up comparatively comfortable and perfectly free from delirium; in short, passing from a state of imminent danger (107°-102° F.) to that of comparative safety in an hour. The disappearance of the cardiac murmurs, along with the lowering of the temperature and diminution of the cardiac contractions, show that these murmurs may be present from enervation of the muscular substance of the heart, without organic lesion of this organ or anæmia of the patient.

SANITARY LEGISLATION AND THE DUTIES OF THE MEDICAL PROFESSION IN RELATION TO THE PUBLIC HEALTH.

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*Lecture introductory to a course on Hygiene and Public Health delivered
6th May, 1882.*

GENTLEMEN,—The branch of medical science which is to engage our attention in this course of lectures is of comparatively recent origin. As first introduced to the student of medicine by our German brethren two centuries ago, it was taught as a part of the course of forensic medicine, under the name of medical police. As the ordinary constabulary of the country afford protection to the lives of the citizens, and shield them from mechanical violence, so this new branch of medical study was meant to provide the state with a class of men trained to afford similar protection to the health and lives of the community by shielding them from such impalpable enemies as lurk in contaminated air, in polluted water, or in adulterated food, and to guard them against the terrible onslaughts of epidemic disease. As a more domestic and personal matter, it has been taught under the name of hygiene, a word which first appears in French medical literature, and which seems to be coined after the fashion of the name of the Greek goddess of health. As Hygieia was the daughter of Æsculapius, so hygiene is the offspring of the mature age of medicine. The whole superstructure of scientific sanitation is founded upon the immense advances which the medical and physical sciences have made in recent times. To complete the nomenclature of our subject, it is also known by the names of preventive medicine, public health, and sanitary science, names which suggest their own meaning.

There is no doubt that many of the most obvious facts connected with the value of physical exercise, and of personal cleanliness, and some of the most striking laws of inheritance of constitutional diseases, and of propagation by personal contact, by clothing, and by atmospheric contamination, of epidemic diseases, were known in ancient times. The ancient sanitary codes of the Jews, of the Greeks, and of the Romans, have been so frequently described, that I will not occupy your

time with them. No doubt they were in many respects the outcome of the physical necessities of the people. If time permitted, it would be very interesting to study the great part which sanitary legislation, and the splendid physical results to which it led, had in the military successes of such small nations as the Jew in Palestine, the Spartan in Greece, and the Roman in Italy; how these sanitary codes united them in close ties of brotherhood, and trained them to habits of hardihood and of self-restraint, and how they were enabled thereby to maintain their ascendancy in countries which they had conquered by the sword, and which they could only maintain by the same means. It is not so well known that in ancient times the legislators of Scotland maintained the purity and strength of the race by somewhat similar means. In the chapter on hereditary disease in Good's *Study of Medicine*, I find the following interesting excerpt from an old book entitled *De Veterum Scotorum Moribus*, by Boethius:—"If any one," says he, "were visited with the falling sickness, madness, gout, leprosy, or any such dangerous disease, which was likely to be propagated from father to son, he was instantly castrated, and if it were a woman, she was debarred from intercourse with men, and if she were found pregnant with such a complaint upon her, she and her unborn child were buried alive." There is a singular similarity between this enactment and the law of Lycurgus, by which every Spartan child, after birth, was publicly exhibited, and if deemed deformed or weakly, and unfit to endure a future life of labour and fatigue, was exposed to perish on Mount Taygētus.

When we come down to later times, when Christianity began to wage a successful warfare against the terrible corruption of society in the later days of the Roman Empire, the early teachers of Christianity being entirely absorbed in the contest with spiritual and moral darkness, took up a very false and dangerous position with regard to the necessities of physical health. The Church set its foot upon the neck of physical investigations of every kind, and the saints of the Church taught their followers that time and attention occupied with material things, beyond what was necessary for the mere maintenance of life, were inconsistent with the higher interests of the spirit. Let me give you a single example of how these men attended to their physical health. Hilarion, whose life is related with admiration by Saint Jerome, thus speaks of his own body:—"I will force thee, mine ass, not to kick, and feed thee with straw, not barley; I will wear thee out with hunger and thirst; I will burden thee with heavy loads; I will hunt

thee through heat and cold till thou thinkest no more of food than of play. He therefore sustained his fainting spirit with the juice of herbs and a few figs, after each three or four days, praying frequently and singing psalms, and digging the ground with a mattock to double the labour of fasting by that of work, till he was so attenuated, and his body so exhausted, that it scarce clung to his bones. In these days filthiness and sanctity were close allies. How the two conditions amalgamated I cannot understand, because, in our day, wherever filth and dirt are abounding, there abound moral degradation and the abodes of crime. The outcome of all this neglect of sanitary law was, in the first place, mental aberration in the saints themselves. There can be no doubt that their strange miracles, in which they sincerely believed, and their dreadful conflicts with demons, who appeared to them in horrible shapes, with wild, wailing, and roaring voices, were mere visions and delusions, the natural outcome of the starvation, the sleeplessness, and the cruel self-torture to which, in their mistaken zeal, they subjected their bodies. In the second place, these doctrines, and the stern repression of free thought or free inquiry into matters which were of vital importance to the common health, were responsible for the terrible epidemics which devastated Europe in the Middle Ages. The filth and the unnatural repression of every human instinct which these men indulged in, had its legitimate result in the vicious licence of their successors, and in the like result among the people who naturally imitated their teachers. The terrible state of personal and domestic life—the filthy houses, the squalid noisome streets, the uncleanly clothing, the utter want of care in the disposal of the excreta of men and animals, and the consequent poisoning of the water courses—all these things have been so frequently described, that I need not waste your time detailing them. If you desire to get a vivid and complete account of them, you will find it in Hecker's *Epidemics of the Middle Ages*, or in Dr. Guy's *Lectures on Public Health*, books which are easily obtained. The histories which these books detail of the ancient famines and pestilences, the black death, the sweating sickness, the plague, the jail distemper, the scurvy, and the small-pox, which raged unchecked in epidemic after epidemic over the whole of Europe during the Middle Ages, and down to the eighteenth century, all these histories are exceedingly instructive, as showing the outcome of barbarous habits, of gross sanitary negligence, and of superstition which obstructed the progress of rational enquiry. So long as

epidemics were looked upon as judgments of the Almighty, which could only be averted by penances and masses, by days set apart for public humiliation, fasting, and prayer, no progress could be made in the promotion of the cause of public health. The only sanitary result of all these centuries of suffering was the re-enactment of the old Jewish sanitary laws for the isolation of persons suffering from contagious disease and of their attendants, and for the destruction or disinfection for their clothing and houses. The earliest regulations for these purposes were issued by Bernardo, the ruler of Reggio, and dated from the outbreak of the Black Death in Italy in the fourteenth century. In the fifteenth century, we are again indebted to Italy for the quarantine laws which were framed in Venice in 1485.

With the advance of civilisation and the progress of education which followed the Reformation times, the masses of the people gradually acquired habits of greater decency and cleanliness, and the dietary of the labouring classes became more varied and better fitted to maintain the body against the attacks of epidemic disease; the land was better cultivated and drained, and so, many of the most fatal pestilences disappeared. The eighteenth century saw the first foundations of modern sanitation laid. Six great sanitary reforms of increasing importance were effected during that century. We notice first the introduction of inoculation for small-pox, by Lady Mary Montague, in 1722. 2nd. The introduction of proper means of ventilation into public buildings and ships: the first successful attempt at this was effected by Desaguliers in the House of Commons in 1723, and subsequently in the ships of the British Navy, by the indefatigable labours of Mr. Samuel Sutton. 3rd. The discovery of the cause of lead colic, by Sir George Baker, in 1767, and its consequent disappearance in epidemic form. 4th. The demonstration of the true method of preventing scurvy, which had been the great scourge of our seamen. Although the virtues of lemon juice had been extolled as an anti-scorbutic agent by Woodall so early as 1617, and many observations had been made on the benefits derived by scorbutic patients from the use of fresh vegetables, no general attention was paid to these remedies until the celebrated navigator, Captain Cook, read to the Royal Society an account of his wonderful three years' voyage, and of the success which attended hygienic and dietetic measures. He left England in 1772, with a crew of 118 men, sailed for three years, and returned with the loss of three men by accident and one only by disease. 5th. The reform in the sanitary administration

of our prisons, which we owe to the labours of the devoted and philanthropic John Howard. Our prisons, which in his time were dens of contagious disease, are now transformed into sanatoriums where a case of contagious disease rarely arises, and from which a criminal, after his term of imprisonment expires, issues forth greatly invigorated and improved in health, and so enabled to renew his attacks upon the property of the lieges with unwonted vigour. 6th. The last and most important discovery of all. Just before the century expired, in 1798, Dr. Jenner published the results of his experiments on cow-pox lymph, and the proof of its protective power against small-pox, the disease which in the eighteenth century caused more suffering, deformity, and death, than all the others which the previous reforms had swept away. For an interesting and carefully compiled account of these great sanitary triumphs, I refer you to Dr. Guy's book, which I have already mentioned.

With this very brief notice of the rise and progress of sanitation in early times, I shall pass on to the present century, and endeavour to give you an account of the laws which the legislature of this country has enacted for the protection of the health of the people, and the bearing which these laws have upon the interests and responsibilities of the medical profession. The statute laws which refer to the health interests of the nation have all been enacted, with a very few unimportant exceptions, during the past fifty years. Before that time the common unwritten law (derived from the Roman law, the canon law, and the decisions of the supreme courts of justice), gave a certain amount of protection to those who could afford to raise a lawsuit. There was a general understanding that, when any man could show that his neighbour, by neglect to remove noxious substances, did injury or occasioned risk to his health or property, or generally rendered his life uncomfortable to him, that the cause of annoyance must be removed and damages paid for mischief done. In no case, however, was any action taken with regard to insanitary conditions of person or dwelling, in the interests of the man himself, or on the ground of his becoming a centre for the propagation of disease to the public at large.

Even in 1832, it was with the greatest difficulty that bags of rags sent to Edinburgh from the districts affected with cholera could be dealt with by the authorities, and it was only after protracted litigation, and in consideration of the state of alarm for cholera which then prevailed in the country, that the Court of Session decided in favour of the Board of Health, reserving the right of the proprietor of the rags to damages

for his pecuniary loss. In ordinary times, the process by which a nuisance was removed was both tedious and costly. In a case carried to the Court of Session, with the greatest desire on the part of the parties interested to bring the case to the speediest possible adjustment, by the most frugal litigation, the smallest expense was estimated at £200, and with regard to time it was observed that the pursuer's agent would not be to blame if he got the trial through in two years. The first Scotch statutory law having reference to sanitary matters was passed in 1427, and made provision for the separation of lepers from the rest of the community. In the preceding century, however, a leper house had been founded in the Gorbals of Glasgow, so that then, as now, the citizens of Glasgow figured in the forefront of sanitary reform. A few other enactments of later date had reference to the outbreak of the plague or black death. The same state of matters existed in England, although the common law afforded the same protection against injury to the life and property of individuals, its benefits were almost as difficult to obtain and as costly as in the sister country. In the middle of last century the great sanitary discoveries with regard to the prevention of such widespread and dangerous epidemics as small-pox, lead colic, and scurvy demonstrated for the first time that such diseases could be dealt with, like other physical manifestations, by rational measures, founded upon the results of careful scientific inquiry. As the knowledge of the great benefits which resulted from these discoveries spread among the people, the more populous and wealthy towns began to recognise the importance of sanitary regulations, and by special Acts obtained power to deal with the overcrowded and filthy dwellings of the labouring classes, and with the increasing impurities of air and water which abounded in every manufacturing centre. When a few of the large towns, in this fragmentary way, got their own most pressing necessities provided for, they paid no more attention to the subject. No general measure applicable to the whole kingdom was thought of until the great epidemic of cholera in 1832 terrified the nation into a fit of sanitary activity. The alarm which that epidemic produced had most important results. Debates immediately took place in Parliament, pamphlets were written suggesting every kind of cause and remedy, and newspapers were filled with accounts of the mysterious plague which threatened to rival in its terrors the black death or the sweating sickness of the Middle Ages. The Government appealed to the doctors for information, but unfortunately the doctors differed both as

to its cause and as to the means by which it was propagated, They had dreadful disputes about the question of contagion, and about the necessity for the vexatious quarantine arrangements which the doctrine of contagion involved. A great many of those who had experience of cholera in India, such as the late Professor Lawrie, of Glasgow, held that cholera could be communicated from man to man, and a good deal of evidence was collected to show that it travelled along the lines of merchandise. On the other side, this doctrine was assailed with great bitterness, by such men as Professor Lizars, of Edinburgh, who wrote that he considered that the pernicious doctrine of contagion had let loose upon the public mind one of the strongest auxiliaries to the propagation of the disease—viz., fear. Referring to the quarantine laws, he said that, looking at the question of contagion from a national point of view, he found it “revelling in and protected by the bigotry of antiquated laws, which are a disgrace to the Government of this enlightened nation.” And as part of his contribution to the etiology of this mysterious disease he informs us in his closing paragraphs that cholera is epidemic, that it has been cast upon us by the inscrutable workings of the Divine Providence, that human power cannot avert it, and, had it not been for this pernicious doctrine of contagion and these antiquated laws, the minds of Christian people would have bowed with reverence and humility to the inscrutable decrees of Him whose fiat they had vainly endeavoured to avert. There was small hope of enlightenment from a man who looked at the causation of the disease from this point of view. It is interesting to read these old pamphlets in the light of what we now know of the means by which cholera is propagated. In 1832, the modern scientific spirit had not yet gained the victory even in the medical world. But after eliminating all the points of difference and dissension, the gain in knowledge which resulted was this, that whether cholera was contagious or not, it fell with direst force upon the abodes of poverty, where in those days overcrowding, bad drainage, and impurities of every kind tainted the air and water of the people. While the labouring population died in thousands, the middle and upper classes suffered to a comparatively small extent. They were, nevertheless, terrified into action for the benefit of their poorer neighbours, who were found to be a source of danger to themselves. Stimulated by the agitation outside and by revelations of sanitary neglect of the poorer classes, which the cholera inquiries revealed, Parliament appointed a Royal Commission in 1832 to inquire

into the state of local administration of relief to the destitute, including the destitute sick. Speaking of the methods of poor law administration which existed at that time, Mr. Chadwick, who was a leading member of the Commission, informs us that the ignorance, the injustice, and the waste of this local government and its expense exceeded that of almost any existing form of government known—that the general local authority—the parish had no sanitary attributes whatever—the elements and name of sanitation were unknown. The poor law administration was therefore reorganised. Between sixteen and seventeen thousand parishes were ultimately consolidated into about 650 unions, and, as the registration of deaths in the old parishes was found to be very imperfect and inaccurate, the clerk of the union became local superintending registrar, and a new department was added to the office of the Registrar-General, where information was collected as to the causes of death, and Dr. Farr was appointed to superintend the results and to prepare reports for the consideration of Parliament. In this way a new and powerful lever for uprooting abuses was placed in the hands of sanitary reformers. Wherever excessive mortality existed its causes and incidence were publicly brought to light, and the evil results of unwholesome conditions clearly shown.

(To be continued.)

A NEW OPERATION FOR UTERINE DISPLACEMENTS.

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OF late years the causes of and the remedies for displacements of the uterus have much engaged the attention of the profession. The tendency of treatment consists mainly in the use of such mechanical appliances as pessaries of varied form, which, taking a basis of resistance from the walls of the vagina, receive the weight of the uterus and retain the organ in a position as nearly normal as the condition of the parts admits. But these apparatus are in many respects objectionable, frequently are of no service whatever, and occasionally give

rise to distressing irritations that aggravate the original malady.

Where a pessary fails to retain the uterus efficiently, the mechanic gives place to the surgeon, who, by making raw the opposed walls of the vagina—occasionally by removing a portion—and then by retaining the raw surfaces in close apposition by ligatures, succeeds in procuring such adhesions as occlude the vagina and effectually prevent at least actual prolapsus. But such operations have no useful effect in cases where the fundus of the uterus is much retroverted, and otherwise they are subject to various drawbacks to which I need not more particularly refer, as my object at present is to describe an operation which I have demonstrated very frequently in the anatomical rooms during the last two years, and to which I have directed the attention of medical friends during the same period. It possesses, in my opinion, many advantages and very few drawbacks. This operation consists in exposing the extremities of the round ligaments of the uterus, where they lie covered only by the skin and fat and areolar tissue at the pubes—then drawing upon them so as to lift the uterus, and then securing the ends of the ligaments by means which cause them to form a new attachment to the pubes. While impressing on the minds of the students my suggestion as well worthy their consideration, when suitable cases occurred as they entered on practice, I thought it well, before carrying my conception into practice, to make my dissections and experiments so numerous as to embrace a tolerably full experience of the conditions which might occasionally prove embarrassing. And it was not until February last that, aided by my friend and colleague, Dr. Allen, I attempted the operation on the living subject. To that first operation, because unsuccessful, I will afterwards more particularly refer, as it illustrates some of the collateral conditions which require to be considered and provided for in order to ensure success. Of the principle on which the operation is based, of its almost absolute safety, and of its great likelihood of success in suitable cases, I have no doubt whatever. On laying my views and the results of my numerous operations on the dead subject before Professors Cleland and Leishman, I received such unequivocal encouragement and approval that I have since emphasised with all the assurance of conviction, my recommendation of the new operation to students of the anatomical rooms, and to my medical friends.

Although publishing my views sufficiently in the dissecting room, I have felt restrained from detailing them in the

medical press until I had the opportunity of corroborating their practical value by actual cases on the living subject. Meanwhile, I have been anticipated by Dr. William Alexander, visiting surgeon to the Liverpool Workhouse, to whom the same operation has suggested itself, and who, with opportunities I have not yet obtained, has successfully treated four cases, the details of which are published in the *Medical Times and Gazette* for April 1882. His results have been remarkably good and quite corroborative of my anticipations. I offer Dr. Alexander my cordial congratulations, and refer to his paper for interesting details. Meanwhile I may bring conviction to the minds of others by now laying before the profession an epitome of the notes on the anatomy and the surgical relations of the parts concerned in the operation which have formed the substance of my prelections to students and explanations to medical friends.

On examination of a frozen section in the mesial line, showing *in situ* the pelvic viscera of a healthy female adult, it will be seen that the structures forming the floor of the pelvis are divided in two portions by the vagina, the long diameter of which is *transverse* above the vulva. The anterior or *pubic* segment, as it is termed by Dr. Hart, * is very loose in its anatomical connections, and can be readily pushed up or pulled down to what I may call a considerable degree. This segment comprises the bladder, the anterior wall of the vagina, and the uterus. The posterior or *sacral* segment lies partially underneath and supports the pubic division. It so far contrasts with the anterior segment that it is very firm, resistant, and closer in its anatomical connections, and it comprises the coccyx with attached muscles, the perineal body, and the rectum. The uterus, short, firm, and upright in position rests upon the sacral segment, and is, to use a nautical phrase, "moored" by its various ligaments, which may now be considered.

Passing directly backwards from the neighbourhood of the cervix, there are two fibrous bands, one on each side, which are called the utero-sacral ligaments. They embrace the rectum, and can be traced to the front of the sacrum; when the cervix is dragged downwards or forwards, or when the fundus is drawn backwards, they become tense. When, on the contrary, the uterus is anteflexed or the cervix pushed back, they become lax. Their use is evidently to retain the uterus in the posterior part of the pelvis.

* *The Structural Anatomy of the Female Pelvic Floor.* D. B. Hart, M.D. Edinburgh: M'Lachlan & Stewart. 1880.

In front, springing from the sides of the cervix uteri, two lateral bands pass forward to the bladder. They are called the utero-vesical ligaments, are composed chiefly of peritoneum and of tough, white fibrous tissue. From my dissections I find that this fibrous tissue is a continuation of the fibres of the round ligaments.

The *broad* ligaments pass in an outward direction from the anterior and lateral walls of the uterus to the lateral walls of the pelvis. They are formed by two layers of peritoneum enclosing an intermediate layer of areolar and of muscular tissue, and they are traversed by the *round* ligaments, together with numerous vessels and nerves going to supply the uterus and ovaries. When acting efficiently, the broad ligaments act in preventing flexions of the body of the uterus upon the cervix.

The *round* ligaments have attracted the attention of many anatomists since they were specially referred to by Carolus Stephanus. To him may in truth be attributed the merit of their discovery, but it is to Winslow we are indebted for the first accurate description. That the round ligaments contain muscular fibres was first pointed out by Meckel, although he did little more than refer to these organic fibres as being continued on the round ligaments from the walls of the uterus itself. I note that above twenty authors, more or less eminent, have since given detailed descriptions of the structure, relations, and supposed uses of the round ligaments.

Amongst these observers Rosenberger may be specially mentioned as having distinguished three fasciculi of striated muscular fibre, of which two join the transverse abdominal muscle, while the third ends at the upper margin of the external abdominal ring. Rau has described, in the round ligaments, fibres which terminate in the mons veneris and vulva, and others which he traced to the crest of the pubes. He held that the uterus was drawn down and fixed by the round ligament, * during the ninth month of pregnancy, and while the pains of labour occurred; and in these views he is corroborated by Velpeau, who states that he has seen these ligaments contracting, and also by Schweighauser, who felt a vermicular motion in them in a case of inverted uterus.

Dr. Schiff first pointed out that the round ligaments became greatly enlarged during pregnancy, even to four times the thickness, he alleges, of their condition in the virgin, and he states that they end in a kind of cone on the walls of the uterus. My own dissections of uteri in the conditions which attend on the impregnated state so far confirm the views of Dr. Schiff as to

* *Stricker's Jahrbuch.*, 1872.

satisfy me that a decided increase in the size of the round ligaments is a certain result, but not that the change is so considerable as Schiff has attempted to make out.

But the most complete and altogether reliable description of the round ligaments is that given by Dr. Rainey,* who says—“The so-called round ligaments of the uterus, regarded as a muscle, may be said to arise by three fasciculi of tendinous fibres—the inner from the tendon of the internal oblique, and the transversal is near to the symphysis pubis; the middle, from the superior column of the external ring near to its upper part, and the external fasciculus from the inferior column of the ring just above Gimbernat’s ligament. From these attachments the fibres pass backwards and outwards, soon becoming fleshy. They then unite into a rounded cord, which crosses in front of the spermatic artery. . . . It then gets between the two layers of the peritoneum forming the broad ligament, along which it passes backwards, downwards, and onwards to the anterior and superior part of the uterus, into which its fibres, after spreading out a little, may be said to be inserted. . . . After passing between the layers of the broad ligament to about the distance of an inch and a half from its superior part, they degenerate into fasciculi of granular fibres, mixed with long threads of fibro-cellular tissue.”

Besides muscular fibre, the round ligaments contain numerous vessels, together with some nerves and also absorbents. The arterial trunks are large, but the capillary vessels are similar to those found in ordinary muscular tissue. Intermixed with the substance of the round ligament there is a very considerable quantity of fibro-cellular tissue, so great indeed as to lead a superficial or incautious observer to overlook altogether the presence of muscular fibre, more especially as the colour of the muscle is pale and in contrast with the deep red of voluntary muscle in the limbs. But of the character of the muscular tissue found in the round ligament there is no doubt, and it is easy to demonstrate its striped nature under the microscope. Of this character I have sufficiently satisfied myself, and my friend and colleague Dr. Allen, in his independent examination of the tissues under the microscope, found it clearly demonstrable that the muscular fibre was of the voluntary or striped variety.

The fact that the round ligament is composed in chief part of muscular tissue leads naturally to an inference—but to an erroneous inference—that the ligament would prove friable or easily torn asunder. Such, however, is far from being the

* *Transactions of the Royal Society*, 1850.

case, for in thirty subjects in which I have sought specially to determine this point, I have found that the structure was capable of withstanding a very considerable traction. I found it easily capable of drawing the uterus close up to the internal inguinal ring without in any perceptible degree lacerating, much less snapping asunder the ligament itself. This degree of tenacity is no doubt due to the abundance of fibro-areolar tissue which is intermixed with the muscular.

So much for the mere structural anatomy of the uterine ligamentous appendages, and we are now open to consider what the functions may be of the round ligaments—of the long bands—that are so curiously constructed.

In such of the lower animals as have the uterus situated above the pelvic brim, as the dog, sheep, &c., the so-called round ligaments pass forward from the uterus and are attached to the last rib and to the aponeurosis of the diaphragm, consequently they draw the uterus upward and elongate the vagina. Velpeau,* Maygriers,† and Rainey‡ agree in a conjecture that this elongation facilitates the passage of seminal fluid towards the os uteri. However this may be, the conjecture is only referred to in the present connection as illustrative of the varied functions which are attributed to the round ligaments and of the important considerations to which a study of their functions gives rise. In the human subject they are certainly not rudimentary organs, but have important offices to perform. Thus, beyond question, they prevent the fundus of the uterus from being pressed too much in a backward direction, and likewise aid much in preventing the entire body of the uterus from being prolapsed and from resting with undue weight upon the rectum. They also facilitate the process of parturition by fixing and maintaining the uterus in due relation to the pelvis during the pains of labour, and it is very probable that they further aid in preventing the gravid uterus from falling backwards and pressing upon and obstructing the action of the lower intestines.

After this exposition of the relations and functions of the structures which sustain the uterus in its normal position, it is easy to recognise that where the round ligaments have from any cause or set of causes become relaxed the liability to prolapsus or to versions of the uterus is likely to occur. And it is equally evident that by drawing up and shortening the round ligaments the uterus will be suspended upright so to

* *Anat. Chir.*, 1833, vol. ii, p. 272.

† *Nouvelles Démonstrations d'Accouchement*, p. 62.

‡ *Phil. Trans. Roy. Soc.*, 1850.

speak, in the pelvic cavity, and will be sustained in that normal position without being subject to the numerous causes of irritation and of displacement which attend upon the employment of mechanical appliances *ab externo*. And it has really been matter of much amazement to me that a remedy so simple and so instantly and so obviously effective had not till this time been recognised and practised. That there is "nothing new under the sun" is a time-valued maxim; but after much reading and inquiry I have not learned that this new operation is other than a perfectly novel application of remedial surgery. So far it is remarkable; but it is still more remarkable that it should have originated or suggested itself to the minds of Dr. Alexander and myself, spontaneously, and almost coetaneously, and this fact is in itself noteworthy. Such coincidences do, however, belong to the history of many inventions and discoveries in various paths of science, and similar instances of identical conceptions have occasionally been developed in the minds of men living far apart, having no personal knowledge of each other, and with scarcely the possibility of having become acquainted with or interchanging ideas.

The question of priority in this matter will not therefore be in dispute, and I will defer for the moment a reference to the facts which have special reference to this mere personal consideration, and proceed with my exposition of that matter which is of general interest—viz., the operation itself.

A day before the operation the bowels should be cleared out by a gentle laxative and a copious warm water enema. An incision made over the external inguinal ring, and a very careful dissection carried downwards, expose the pale and straggling fibres of the round ligament as they emerge from the ring and take attachment to the dense areolar tissue of the mons veneris. When these fibres are grasped by the forceps *en masse*, and steady traction is made, it is found easily practicable to draw them freely outwards to the extent of one or more inches. In the dissection care should be taken to exclude the inguinal nerve, for although its rupture will do little harm, it will do no good, and its rupture under traction implies considerable, and it may be painful, force. Under the necessary traction the peritoneum does not follow the ligament as it is extruded, but separates and peels off. There is, therefore, little risk of an inguinal hernia resulting, and any such apprehension is reduced to a minimum when it is borne in mind that inguinal hernia does not commonly occur in the female. The incision, about two inches in length, should be

made obliquely, and directed towards the mesial line, and this oblique direction will be found to facilitate the search for the ligamentous fibres much better than a vertical opening. The search for the fibres of the ligament must be made cautiously, and with much patience and little haste, for this is the difficult part of the operation. When fairly exposed, clearly traced, and isolated, they should be grasped by broad-pointed forceps—small polypus forceps are very suitable—and, following the guidance of the ligament, the forceps should be thrust well into the inguinal ring, and the ligament laid hold of as high up as possible. When it begins to yield to the traction, it may be pulled out to any desirable extent. Five or six catgut ligatures, passed over and under the ligament, will sufficiently ensure its attachment to the surrounding tissues, while separate ligatures close the wound, excepting at the most dependent part. Antiseptic dressing, strict rest in bed, and the action of the bowels restrained for a few days by means of opiates, should suffice for the after treatment.

Unless after some previous practice on the dead subject, there will be much risk of failure in fairly recognising and in fully grasping the round ligament. In some subjects the fibres are so small and friable that they will bear little traction of the portion first exposed. It would then be necessary and quite justifiable—and for this recommendation I have Professor Cleland's approval—to grasp *all* the structures lying within the inguinal ring. When this is done, and a little care exercised, the body of the ligament may be secured and brought down in nearly every case.

When the ligaments are drawn out and fastened to the pubes in the dead subject, and the uterus examined *in situ* from the open abdomen, the organ is found to occupy an erect and perfectly normal position in the pelvis, and it is only when excessive traction is made that the uterus is drawn close to the pubes. But even in such conditions it is easily demonstrated that the bladder would not be hindered in its function, for it rises *pari passu* with the uterus, and when filled with water it distends readily, and mounts upward behind the pubes.

There are conditions which may render an operation unsuitable. Of these the most obvious are the presence of large heavy tumours connected with the uterus, or the existence of adhesions of that organ to the neighbouring viscera, caused by inflammatory action at some previous part of the patient's history. A careful examination under chloroform is therefore a prudent preliminary before deciding on the operation, and it

was through absence of this precaution that my first operation on the living subject in February last proved a failure. The patient, aged 40, had prolapsus of uterus for many years, and had received no real relief, if not positive aggravation of her ailment, through the use of various forms of pessary recommended from time to time by her medical advisers. When in the erect posture the os uteri was felt at the vulva, and was easily pushed up; but the slightest attempt at full, or indeed at any farther digital examination caused such exquisite suffering that I too readily assumed that other conditions were favourable, because there was nothing in the history to cause suspicion of pre-existing disease. Assisted by Dr. Allen, she was placed under chloroform and the ligaments exposed, but they did not yield to traction, and then a careful vaginal examination disclosed a great retroversion of the fundus, and such a very evident tying down of the whole body of the uterus by adhesions that it was clearly impossible to relegate the organ to its natural position, and further procedure was abandoned. The failure has proved an instructive warning, and therefore I record it.

Returning to the question of priority in the conception and publication of this novel operation, it is clear that in December 1881, the operation was successfully performed on the living subject by Dr. Wm. Alexander, of Liverpool, and that the case, with details of other three cases, were published by him in the *Medical Times and Gazette* of 1st April, 1882. To Dr. Alexander is, therefore, justly due the merit of being the first to demonstrate on the living subject the practical success of the operation, and of having published the information in the ordinary channels of medical news. On the other hand, it is matter of certainty, and even of notoriety, that during a period of eighteen months previous to the earliest date given by Dr. Alexander, I had publicly taught—that is, published and demonstrated—the operation in Glasgow University to the numerous students of the anatomical rooms, who have since in successive sessions left their alma mater and carried with them my teachings in the relation now under comment. Therefore fully eighteen months previously, the entire subject was thoroughly opened by me to Professor Cleland, and as thoroughly discussed, and soon afterwards to my colleague, Dr. Allen, also to Dr. Wallace, Lecturer on Midwifery, Anderson's School of Medicine, to Professor Leishman, and to numerous others of my professional friends, with all of whom I had free interchange of views on the subject, and the present communication is merely an epitome of the notes from which I

conveyed my observations to the students and to my professional friends. I accord the fullest credit to Dr. Alexander, and I ask for myself equal consideration in connection with an operation which I confidently anticipate will come to be recognised as a valuable addition to the triumphs of operative surgery.

CURRENT TOPICS.

REMARKS BY MEDICAL OFFICER, TO ACCOMPANY MORTALITY TABLES OF THE CITY OF GLASGOW.—In continuation of our former notes, we make the following quotations from the report for the quarter ending 31st December, 1881:—

OCTOBER, 1881, was unusually cold and dry. The mean of the highest daily temperatures recorded was 52° F. The mean of the lowest, 38·2° F. Rain fell on six days. The wind blew from the E. for fifteen days.

Compared with October for ten years, the mean temperature of October, 1881, was much lower than in any year except two, and lower than the average by nearly 2° F. The rain-fall was 2·3 inches lower than the average. The general death-rate was lower than the average by 1 per 1,000 living. The death-rate of children under five years was lower than the average by nearly 1 per 1,000 living.

NOVEMBER, 1881, was unusually warm and wet. The mean of the highest daily temperature recorded was 52·9° F.; the mean of the lowest 41·1° F. Rain fell on fifteen days. The wind blew fifteen days from the S., S.W., and W.

Compared with the average of November for ten years, the mean temperature of November, 1881, was higher than previously recorded. The rain-fall was higher than the average by fully 1 inch. The general death-rate was lower than the average by 4·7 per 1,000 living. The death-rate of children under 5 years was lower than the average by 15 per 1,000 living.

DECEMBER, 1881, was somewhat warmer and wetter than usual. The mean of the highest daily temperatures recorded was 45·1° F.; the mean of the lowest 34·3° F. Rain fell on ten days. The wind blew from the S., S.W., and W. for fifteen days.

Compared with December for ten years, the mean temperature of December, 1881, was fully 1° F. above the average. The rain-fall was below the average by nearly 1 inch. The general death-rate was lower than the average by 7.5 per 1,000 living. The death-rate of children under 5 years was lower than the average by 23 per 1,000.

The average death-rate of Glasgow in the Fourth Quarter of the year for ten years is 27.7. For 1881 it is 23. The death-rate below 5 years was 92 on the ten years' average, and 79 in this quarter. The mean temperature of the quarter was 1.7° higher than the average of ten years (43.6° F. and 41.9° F.), and the rain-fall was 2.2 inches less (10.1 and 12.3 inches).

Compared with the other seven "Principal Towns" of Scotland (the mortality of whose entire population was at the rate of 20.5 per 1,000), the death-rate of Glasgow for this quarter was lower than that of Perth and Greenock.

Typhus—twice as many deaths in Leith as in Glasgow; none in Aberdeen, Greenock, or Perth. *Enteric Fever*—sporadic deaths in all towns. *Small-pox*—no deaths. *Scarlet Fever*—epidemic in Edinburgh, Dundee, and Greenock; no deaths in Aberdeen or Perth. *Measles*—no deaths in Greenock or Perth, but the most fatal infectious disease of the quarter in Glasgow. *Hooping-cough*—not excessively fatal in any town. *Diphtheria*—unusually fatal in Glasgow and Greenock. The proportion of the total deaths in the "Principal Towns" contributed by Scarlet Fever, Measles, and Hooping-cough was, over all, 7.7 per cent.; Glasgow, 9.3 per cent.; Edinburgh, 8.7; Greenock, 7; Paisley, 6.3; Dundee, 6.2; Leith, 5; Perth, 3.8; Aberdeen, 2.3.

Compared with "twenty large English Towns" (the mortality of whose entire population was at the rate of 22 per 1,000), the death-rate of Glasgow for this quarter was lower than that of four, including Liverpool, 28, and Manchester, 24.8. The death-rate of London was 21.7.

Fevers—more than twice as fatal in London this quarter as in last. In London caused a death-rate of 6 per 10,000 living; in Brighton of 10, as compared with $4\frac{1}{2}$ in Glasgow. *Small-pox*—epidemic still declining in London. Caused 23 deaths in other towns. *Scarlet Fever*—by far the most fatal infectious disease in this quarter. In Brighton it added 2 per 1,000 to the death-rate; in Nottingham, 3.4; and in Hull no less than 10.8. In Hull this disease has prevailed with unusual malig-

nancy for six months, contributing in the present quarter no less than 37 per cent of the total deaths. *Measles*—the epidemic of the quarter in Liverpool, where it added 2·7, and in Leeds, where it added 1·3 to the death-rate. *Whooping-cough*—the most fatal epidemic in Salford, where it added 1·7 to the death-rate. The proportion of the total deaths in the twenty towns contributed by these three infectious diseases of children was 10·4 per cent. The proportion in the ten largest was—Nottingham, 18 per cent; Liverpool, 15; Birmingham, 10; Salford, 10; London, 9½; Leeds, 9½; Bradford, 8½; Manchester, 7½; Sheffield, 6½; Bristol, 5.

Compared with twenty-one European cities (the mortality of whose entire population was at the rate of 26½ per 1,000), the death-rate of Glasgow was less than that of thirteen, including St. Petersburg, 42; Paris, 46½; and Vienna, 25½.

Fever—the epidemic which has prevailed for some time in St. Petersburg seems to be dying out, but it still adds above 2 to the death-rate. Diminished and moderate mortality in other towns. *Small-pox*—still prevalent in Paris, and epidemic more fatal in Vienna, Prague, and Buda-Pesth. *Scarlet Fever*—prevalent in St. Petersburg, Berlin, and Buda-Pesth. *Measles*—malignant epidemic in Christiania, where it caused no less than 20 per cent of the total deaths. *Diphtheria*—very fatal in many towns—*e. g.*, caused 11·4 per cent of all the deaths in Dresden; 8 in Berlin; 4·8 in Hamburg; 4·8 in Paris. Everywhere more fatal than in this country. *Diarrhoeal Diseases*—while still fatal to an extent which is unknown in this country have shrunk to much less bulk in the mortality than in the summer quarter. Paris alone produced 980 deaths, against only 631 from the twenty English towns.

Compared with six American cities (the mortality of whose entire population was at the rate of 25 per 1,000), the death-rate of Glasgow was lower than that of all but two.

Fevers—still more fatal in Philadelphia, but elsewhere less. *Small-pox*—more fatal in Philadelphia and New York, and present in all cities. *Scarlet Fever*—epidemic in New York and Philadelphia. *Measles*—only sporadic deaths. *Diphtheria*—the most fatal epidemic disease of the quarter; caused 13 per cent of all the deaths in Baltimore; 8·3 in Brooklyn; 6·6 in New York; and 4 in Philadelphia.

In Scotland generally, so far as indicated by the "Registrar's Notes," excepting an occasional reference to enteric fever in

country districts, the infectious diseases of children alone have any local prevalence, and of these chiefly measles, which exists in epidemic centres all over the country. In Falkirk this disease caused nearly 20 per cent of the total deaths. In "Glasgow—Landward and Suburban," as reported on from month to month by the Registrar-General, $8\frac{1}{2}$ per cent of the total deaths were due to the infectious diseases of children. In Partick between 8 and 9 per cent were caused by measles alone. There has been a remarkable outbreak of diphtheria in "Govan Church" District, where fully $9\frac{1}{2}$ per cent of the total deaths were returned under the class "Diphtheria, Croup, and Laryngitis." The number so returned is 34, and the gravity of the outbreak may be estimated from the deaths returned under the same classification in the "Large Towns" which have a population above that of "Govan Church"—viz., Glasgow, 120; Edinburgh, 32; Greenock, 30; Dundee, 11; Paisley and Leith, each, 10; Aberdeen, only 4.

Of the deaths under one year, in only 82 per cent was the cause of death certified; of the deaths one and under five years, in 92 per cent; of the deaths above five years, in 95 per cent. There was therefore no proof of medical attendance having been obtained for 18 per cent of those who died under one year, for 8 per cent of those who died one and under five years, and for 5 per cent of those who died above five years.

Of the deaths under one year $28\frac{1}{2}$ per cent were in Friendly Societies; of the deaths one and under five years, 52 per cent; of the deaths above five years, 50 per cent.

Of the children who died under one year 11 per cent, and of those who died one and under five years 6 per cent, were illegitimate.

Of the legitimate children who died under one year, 84 per cent were certified, while of the illegitimate children, 68 per cent were certified. There was therefore no proof of medical attendance having been obtained for 16 per cent of the legitimate, and for 32 per cent of the illegitimate, children who died within their first year.

Of the legitimate children who died one and under five years 93 per cent were certified, while of the illegitimate 82 per cent were certified. There was therefore no proof of medical attendance having been obtained for 7 per cent of the

legitimate, and 18 per cent of the illegitimate, children who died between their first and fifth years.

As compared with the corresponding quarter of last year, there is a decrease of 306 deaths. This decrease is manifest in all classes of disease, but especially in the infectious, the fevers being 28 per cent less fatal, and the infectious diseases of children fully 14 per cent.

GLASGOW SANITARY PROTECTION ASSOCIATION.—At a public meeting—presided over by the Lord Provost of Glasgow—it was resolved that a Sanitary Protection Association should be formed in Glasgow, after the model of a similar association in Edinburgh, formed a few years ago, chiefly through the influence of Professor Fleeming Jenkin.

An influential provisional committee was nominated to organise the Association, and inaugurate its operations.

The Objects of the Association are to—1st. Provide its members, at moderate cost, with such advice and supervision as shall ensure the proper sanitary condition of their own dwellings. 2nd. To enable members to procure practical advice on moderate terms, as to the best means of remedying defects in houses of the poorer class, in which they are interested. 3rd. To aid in improving the sanitary condition of the city.—The first inspection does not necessarily entail any disturbance of household arrangements. It is followed by a report giving detailed information as to house drains, &c., and making specific recommendations, if any improvements are thought necessary. The members are not bound to carry out these recommendations. The subsequent annual inspection will, so long as the sanitary arrangements remain in working order, entail no expense beyond the annual subscription of £1, 1s. The following is a formal statement of the privileges of members. The annual inspection spoken of in the third paragraph will form the main business of the Association. It is believed that no system of drains, or other sanitary appliances, can be depended upon to remain in perfect order without skilled inspection; and this skilled inspection can be cheaply and efficiently provided by the Association.

Privileges of the Members.—Each member is entitled to the following privileges in respect of property within three miles of the Royal Exchange:—1. A report by the engineer of the Association on the sanitary condition of one dwelling or

property, with specific recommendations, if necessary, as to the improvement of drainage, water supply, and ventilation. 2. On the engineer's recommendations being carried out, he shall report as to the efficiency of the work on its completion. 3. An annual inspection of his premises by the engineer, with a report as to their sanitary condition. 4. Occasional supplementary inspection and advice concerning the dwelling or property in respect of which he is a subscriber, whenever this advice may be desired. The fee for such occasional advice will be fixed from time to time by the Council. 5. Reports by the officers of the Association as to the sanitary condition of any dwellings or properties designated by any member, on payment of a moderate fee to be fixed by the Council from time to time, with special relation to the rent of the premises to be inspected. 6. Each member by his annual payment secures the above privileges in respect of one dwelling or property occupied or designated by him. Should he be interested in two or more dwellings or properties, he may secure equal privileges in respect to them all, by paying the annual subscription in respect of each. 7. A report to be obtainable on payment of a special fee on any dwelling or property, other than that in respect of which he pays an annual subscription.

Obituary.

SIR JOHN ROSE CORMACK, KNT., M.D.

WE regret to announce the death of this eminent surgeon in Paris, on the 13th curt. For several years Sir John had been in failing health, and the extreme prostration which latterly manifested itself was the cause of much anxiety to his medical friends in London and Paris. There can be no doubt that his noble devotion to duty—whether in the battlefield, the hospital ward, or in the quiet of his study—helped to shorten the brilliant life which has closed at the age of sixty-seven. Sir John was the only son of the late Rev. John Cormack, D.D., of Stow, near Abbotsford, the residence of Sir Walter Scott, with whom his father was on terms of intimacy. He was born in Edinburgh, in March 1815. In 1833 he began his medical curriculum at the University of Edinburgh, and four years later he graduated as Doctor of Medicine, receiving

on the day of graduation the gold medal awarded to the most distinguished graduate, and Sir Robert Christison's prize for the best treatise on creosote. These were honours of much significance, especially when it is remembered that he had for opponents men like Dr. Carpenter of London, and the late Professor Hughes Bennet. After completing his curriculum at Edinburgh he proceeded to Paris, where he studied under Velpeau and Andral. Soon after his return from the French capital he was appointed physician to the Fever Hospitals. The splendid work he performed in these hospitals during the epidemics of typhus, typhoid, and cholera, is attested by his work entitled *Clinical Studies*, which has gained for him an honourable reputation in the profession.

Always devoted to the literature of his profession, and possessing true gifts as a writer and a critic, he established the *Edinburgh Medical Journal*.

From Edinburgh he removed to London to a wider sphere of work, and in the latter city he was equally successful in making for himself a name. In 1868 he removed to Paris, and succeeded the late Sir Joseph Oliffe as physician to the British Embassy, at the same time taking a leading position among the English community. His name, however, is best and most widely known in connection with the two sieges of Paris. During the Franco-German war he was placed in charge of the "Ambulance Anglaise," established and maintained by Sir Richard Wallace, Bart., M.P., and all through the sieges he and his son, the late Dr. Baillie Cormack, displayed the highest qualities of courage and devotion. It was in recognition of his eminent services during these terrible times that in 1877 her Majesty personally conferred the honour of knighthood upon Dr. Cormack, and the French Government the distinction of being enrolled as a member of the Legion of Honour, which was announced to him by the Foreign Minister, Jules Favre, in the following terms—"For the devotion with which you have cared for the French wounded and dying, whom you have sought for on the field of battle, and so faithfully attended in the British ambulance, France is grateful to you." Strange to say, although twice shut up in a beleaguered city, his excellent translation of Trousseau's classic work was not delayed.

Up till his death on Saturday, Sir John held the appointment of physician to the Hertford British Hospital, founded and endowed by Sir Richard Wallace, and in the management of this institution he took a special interest and pride, as many medical men from Glasgow and elsewhere who have visited

the hospital can testify. His contributions to medical literature were numerous, always showing an extensive knowledge of the literature of medicine. His records of cases were always taken with great care and minuteness. The British poor in Paris will sorely miss him, for he was one of their best friends. The writer has a distinct recollection of the genial and kindly manner with which he always attended to their requests. Apart from his abilities as a surgeon and an author, he was a man of simple and devoted Christian faith, of profound sympathy for his fellow-men, and of unswerving fidelity to duty. On the 17th his remains were conveyed to their last resting place in the cemetery of Neuilly. Perhaps no more suitable spot could have been selected. It was in this suburb of Paris that the most stirring scenes of his life occurred; it was here that the most sanguinary fighting during the siege took place; and it was in this locality that the temporary British hospital, in the Route de la Revolte—near the present hospital—was situated. He was an M.D. of Edinburgh and Paris, a Fellow of the Royal College of Physicians of London and Edinburgh, a Fellow of the Royal Society, and Corresponding Member of the Academy of Surgeons, Madrid.

REVIEWS.

Clinical Lectures on Diseases of the Heart and Aorta. By GEORGE WM. BALFOUR, M.D., F.R.C.P.E., F.R.S.E., &c. Second edition. London: J. & A. Churchill. 1882.

THAT Dr. Balfour's book has already reached a second edition is not to be wondered at, as it took from the first a high rank among works on diseases of the heart. The present edition has been in large part re-written, and somewhat enlarged, but it still retains its original clinical character. The first chapter is devoted to the diagnosis of cardiac diseases generally, commencing with a brief account of the symptoms that lead one to suspect heart disease, and dealing fully with the physical signs that confirm the suspicion. In regard to percussion, Dr. Balfour, to some extent, follows the German method, and recognises two areas of præcordial dulness, the one corresponding with the actual size of the heart, the other indicating the exact measure of the part in contact with the thoracic

walls. To the latter, or superficial dulness, he attaches no importance, as it "betokens only the comparative degree to which the heart is uncovered by the lung, and as that may depend either upon increased size of the heart itself, or diminished expansion of the lungs, the information conveyed as to the size of the heart is of no positive value whatever." He accordingly seeks in all cases to make out the absolute size of the organ, but he does not indicate very clearly the force of stroke to be employed with this object. That it is possible in percussing from the left clavicle downwards to detect a change in the note over that part of the heart which is overlapped by lung tissue, no one will deny; but that we can map out the actual limits of the heart in this way, seems to us more than doubtful. Dr. Balfour enters into a detailed description of the anatomical conditions and acoustic principles which satisfy him that this can be done. But he fails to note that when percussing with such a force of stroke as will elicit dulness from the heart lying beneath the lung, sonorous vibrations are produced not only perpendicularly, beneath the pleximeter, but also radiating from it on all sides, and hence the result loses in precision what it gains in extent. In this connection he makes a somewhat laboured use of Skoda's terms *voll* and *leer*—terms which have remained almost unintelligible since Skoda's time, and have been discarded by the more recent German writers on physical diagnosis. In discussing the various alterations of the cardiac sounds the author pays considerable attention to accentuation and reduplication, his views with regard to which scarcely accord in all respects with those generally entertained: *e. g.*, his assertion that accentuation of the aortic second sound is an invariable sign of aortic dilatation, when the accentuated sound is heard in its normal position. The chapter concludes with an exposition of the physical causes of murmurs, the views of Chaveau and Savart being adopted without reserve.

Diseases of the mitral valve are discussed in three chapters. The doctrine of the auricular-systolic murmur is, generally speaking, that which is taught in the West, but Dr. Balfour still holds to the name "pre-systolic," though he admits that it is a misnomer. He rightly insists on it as being the only absolutely pathognomic murmur, and in connection with the fact that it sometimes disappears while its causative lesion remains, he indicates sufficiently clearly the necessity for studying other signs of cardiac disease besides murmurs. The points which, apart from murmur, lead to the diagnosis of mitral stenosis are stated in the following paragraph. "These cases exhibit in a marked manner the extreme importance of great irregularity

of the pulse and cardiac action as a symptom of mitral stenosis, especially when associated with hæmoptysis. Though extremely suspicious under all circumstances, these symptoms may, I believe, be regarded as quite pathognomic when accompanied by a tolerably persistent reduplication of the second sound, especially if associated with pre-systolic thrill, notwithstanding the absence of all murmur. The presence of pulmonary accentuation is a phenomenon of comparatively slight importance in specialising the diagnosis, as it is usually absent and rarely well marked when reduplication is present, and is really due solely to pulmonic congestion, which may be the result of many various lesions." To accentuation of the pulmonic second sound we think Dr. Balfour attaches too little importance; it is no doubt only a sign of increased tension in the pulmonary circulation, but it is often the first sign of that, especially in mitral obstruction, and therefore demands attention.

Mitral regurgitation, according to the author, is even more common than is generally supposed. He says that in all cases of mitral stenosis there is regurgitation, and he devotes a chapter to curable mitral regurgitation, indicating thereby chiefly that form of cardiac affection met with in chlorosis, pyrexia, chorea, &c., the murmurs in which are commonly held to be hæmic or functional. He adopts Naunyn's views as to the production of these murmurs, and the area of distribution of mitral regurgitant murmurs generally. The argument in favour of them is much more fully stated than in the first edition of the book. Into this subject, however, we have not space to enter.

Tricuspid regurgitation, its signs and its causes, are clearly expounded in lecture vii, the views adopted being those made public by Dr. Gairdner in his *Clinical Medicine* (1861), and in this journal (May and December 1867). The interesting relation that exists between mitral stenosis and tricuspid regurgitation was first pointed out by Dr. Gairdner; and, indeed, the whole subject of the signs and causes of such regurgitation was to a great extent rendered clear by him. The experiment, illustrative of the action of dilatation of the right ventricle (p. 192) first appeared in the *Glasgow Medical Journal* (May, 1867); but, in the work before us, no acknowledgment of these facts is observed.

The chapter on the action of digitalis on the heart and on the therapeutics of cardiac diseases generally, will be read with great interest, as conveying Dr. Balfour's experience up to this time. This chapter has been considerably changed in the

present edition, an attempt having been made to explain the action and to formulate rules for the administration of digitalis and other drugs. The author has a firm belief in the tonic and stimulant action of digitalis. According to the mode of its administration he classifies its action as tonic or cumulative. "One grain of the crude drug, or its equivalent in one or other of its preparations, given every twelve hours, is a purely tonic dose in all but the most exceptional cases. In these exceptional cases, even this dose, and in all others, any larger dose is cumulative in its action, so that after a longer or shorter time certain sensible results are found to follow. These are a primary increase in the flow of urine, with subsequent diminution, nausea and vomiting, or a preternatural slowing of the pulse." In urgent cases the drug must be administered in a cumulative manner, and "nothing but good will follow provided we stop the moment the urine falls, the pulse slows, or nausea occurs." Dr. Balfour gives large doses without fear of ill effects, and does not, we think, sufficiently emphasise the dangers which we have observed when diuresis does not speedily set in. According to him, the full effect of the drug is not to be expected till from one to three days, and hence he thinks digitalis has often been too hastily discarded in favour of some other drug which had been administered just at the time that the digitalis was beginning to have its effect. His general conclusions as to the forms of heart disease in which it is to be employed are as follows:—"In the stage of compensation, which we know is never complete, digitalis is never contraindicated, and if we do give it, it must be given in tonic doses, and it will do nothing but good however long it may be continued. In cumulative doses, however small, it ultimately leads to saturation and the development of poisonous symptoms, it must, therefore, when given in such doses, be carefully watched and stopped when the patient has had enough. When the compensation is ruptured—*la période asystolique*—digitalis is imperatively required in every form of heart complaint, and it must be given more or less freely according to the symptoms, and always in cumulative doses. In the spanæmic heart digitalis is sometimes required; generally tonic doses suffice, but when the dilatation is considerable, cumulative doses are requisite. In the neurotic heart, whether gouty or not, or whether the heart be irregular, intermittent, or simply accelerated, digitalis ought only to be given in tonic doses, and is seldom well tolerated."

Another specially interesting lecture is that on the treat-

ment of aneurism by iodide of potassium, a subject with which the author's name is closely associated. From a larger experience Dr. Balfour is now in a better position to offer an explanation of its mode of action and to formulate rules for its administration. He believes it acts by lowering the blood tension without increasing the number of the heart's pulsations, the cause of the lowered tension being an uniform dilatation of the capillaries. The rules to be observed in the exhibition of the iodide are—first, by having the patient at rest and under observation for several days, to determine the normal pulse rate, and then to give ten grains of the iodide thrice daily; and, if the pulse rate remain unchanged, to increase the dose to fifteen grains, beyond which he has not yet been able to get. Those who have read the first edition will see that Dr. Balfour has thus modified his treatment in the direction of decreasing the dose.

Of the other lectures we have not space to write; they are addressed to such subjects as aortic incompetency, the vanishing of murmurs, pericarditis, diagnosis of aneurism of aorta, &c. We can only further say that the work is a valuable addition to the literature of heart diseases, and even those who happen to have the former edition would do well to peruse this one also, as many of the illustrative cases have been brought down to date, and much new material has been added. The work of revision for the press, however, seems to have been but imperfectly accomplished, misprints which might have been corrected in a second edition still remaining, and punctuation being by no means all that could be desired.

Notes on Surgical Treatment and Minor Operations. By
THOMAS F. HOPGOOD, L.R.C.P., M.R.C.S. London: Baillière,
Tindall & Cox.

THIS book professes to be a "guide to every-day work of House Surgeons and Students," but is so imperfect and slipshod a production that we fear it will be of very little use to them or any one else. It is not to such a book as this is meant to be that one would refer on such subjects as *Skin-grafting*, *Housemaid's Knee*, *Tumour of Eyelid*, *Nævus*, *Hare-lip*, *Webb (sic) Fingers*, *Varicose Veins*, *Strabismus*, which are all included. On the other hand, a house surgeon will find that such important subjects, from his point of view, as the "emergency treat-

ment" of fractures, dislocations, cut throat, head injuries, retention of urine, are altogether omitted or merely incidentally referred to. The general arrangement of the book is simply chaotic. We find at p. 35 a paragraph on *Enlarged Bursa Patellæ*, and at p. 56 one on *Housemaid's Knee*, with different descriptions and different directions for treatment. All through the book the descriptions and directions are so imperfect as to be useless to those for whom the book is intended, and in many instances the sentences are so badly constructed as to be almost misleading.

Syphilis and Local Contagious Disorders. By BERKELEY HILL, M.B., and ARTHUR COOPER, Esq. Second edition. Smith, Elder & Co., London. 1881.

THE second edition of Berkeley Hill's work on *Syphilitic and Local Contagious Disorders* has been entirely re-written. The pith of what seemed to be most valuable amongst the vast quantity of literature that has appeared on the subject during the last thirteen years has been added, causing a very considerable increase in the bulk of the volume. The authors have had the assistance of Dr. W. R. Groves and Mr. Nettleship, the former having written the chapter on the syphilitic affections of the nervous system, while the latter has revised and greatly improved the chapter on syphilitic diseases of the eye.

This book, so long and so favourably known, will lose nothing of its prestige by the appearance of the second edition. The work is peculiarly valuable, inasmuch as it does not advocate any set opinions to the exclusion of others. The authors' views are freely expressed without being dogmatic, and the data on which they are founded are given with clearness and precision. At the same time, no pains have been spared in gathering the facts advanced by others in support of opposite opinions. The book is replete with illustrative cases (printed in smaller type than the text) which add greatly to the interest of the work, and form data for independent deductions. The authors are to be congratulated on the efficient manner in which their task has been performed. The work is clearly written, the style is fluent, and the matter so arranged as to sustain the interest and attention of the reader. On the whole, it is one of the best, if not, indeed, the best book which has appeared on the subject.

REPORTS OF HOSPITAL AND PRIVATE
PRACTICE.

GLASGOW ROYAL INFIRMARY.

REPORTS UNDER THE SUPERVISION OF DR. WM. MUIR.

FROM DR. WATSON'S WARDS.

CASE I.—DISEASE OF KNEE-JOINT—EXCISION—[Reported by Dr. Keay, house surgeon]. J. D., aged 14, was admitted into Ward XXVI of the Infirmary, on 19th January, 1882, suffering from chronic arthritis of the left knee, of about three years' duration. The patient could not assign any cause for the disease, which she stated came on very gradually. She first noticed swelling of the joint, unaccompanied by pain; this was early in 1879. In the summer of that year she was able to run about. In the following winter the swelling became more marked, and she suffered considerable pain, particularly at night, which often kept her awake. The disease slowly got worse, and the patient became very weak, improving, however, in the summers of 1880 and 1881. When admitted, she was pale, weak, and emaciated. The knee was considerably enlarged, and was only very slightly painful at times. Patient was kept in the hospital for two months, and fed up as well as possible. She was able to walk about. The knee was dressed with Scott's ointment. The patient was readmitted on 14th April, and it was decided to excise the joint. It was now very painful, and she could not put it to the ground, but could hobble about on crutches.

On 11th May patient was put under chloroform, and the knee excised. When the joint was opened, it was found to be much worse than one would have expected. The cartilages were considerably diseased, and it was found necessary to saw off the ends of the femur and tibia. The limb was put on Dr. Watson's splint, and dressed antiseptically. It has been dressed five times. The patient has never had the least pain, even whilst being dressed, and the wound is now almost healed.

In Dr. Watson's Wards there are at present other two cases of excision of the knee, three of the elbow, and one of the hip, reports of which will be given next month.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1881-82.

MEETING VII.—7TH APRIL, 1882.

PROFESSOR GEO. BUCHANAN, *President, in the Chair.*

DR. NAPIER showed TWO CASES OF PSORIASIS which had been treated by the internal administration of chrysophanic acid. The initial dose was $\frac{1}{2}$ of a grain of the acid rubbed up with sugar of milk, and was gradually increased. The result in both cases was very good, and he believed that this was the first time that the acid had been used in this way. The advantage of this method was, that the remedy might be employed internally in cases where it was too irritating to be applied externally.

Prof. Charteris said that he was much interested in Dr. Napier's cases. It was a further proof of a fact that he had often called attention to—viz., that chrysophanic acid acted as much by being absorbed as by any local effect which it had on the affected skin.

Dr. Steven said that he thought Dr. Napier's cases were very interesting. However, where it could be tolerated by the skin, he thought the acid was as likely to do good by external as by internal use, because then it would act both generally by absorption, and locally by directly influencing the affected area. The time occupied in the treatment had been considerable, and we knew that after a certain interval psoriasis tended spontaneously to improve.

Dr. J. A. Adams thought that Dr. Napier's results were very good, and was of opinion that this method of treatment was a very important one.

DR. GEORGE A. TURNER read a paper entitled, "ON 138 CASES OF AMPUTATION OF THE SCROTUM FOR ELEPHANTIASIS ARABUM." (See p. 401.)

The President complimented Dr. Turner on his very excellent results. It was a disease of which in this country we had very little experience, and it was interesting to know that Dr. Turner should have treated such a large number of cases of this disease so successfully. As he himself had no

experience of the complaint, he could not enter upon the general question, but he was interested in that portion of the paper which dealt with the arrest of the hæmorrhage, and he thought that the instrument shown to the members was a very efficient one. He had once to operate on a very large vascular tumour of the scrotum in which Prof. Esmarch effectually commanded the hæmorrhage by the application of his elastic band.

Dr. Hugh Thomson thought that *Dr. Turner* was to be congratulated on his very great success. Elephantiasis, though not common, was not altogether unknown in this country. He had lately seen a case of it in the foot of 12 years' duration, which had originated in erysipelas. He had tried treatment by compression, but this was not satisfactory, as it excited suppuration.

Dr. Christie expressed his admiration at the very great success which *Dr. Turner* had had. The disease was common in Zanzibar and the East Coast of Africa, but not so common as it seemed to be in Samoa. He could never persuade any of the natives to submit to the operation. This arose from the fact that most of the inhabitants were Mahometan, and would not submit to any mutilation.

Dr. J. A. Adams would have liked some information as to the ætiology and pathology of this affection. Did it occur as frequently in the female as in the male? When it attacked the thighs was it more common on the inner or outer aspects? He thought that the use of Esmarch's band would have been very serviceable in arresting the hæmorrhage.

Dr. Morton said that he had long had the notion that hæmorrhage during operation was not nearly so much to be feared as many people imagined. If care were taken to empty the tumour well before beginning, and to dissect back the skin, there were only few vessels that needed ligature. He had this forcibly impressed upon him once, when he removed a tumour of the labium weighing 17 lbs. In this case there was no clamp or tourniquet used, but the vessels were simply tied as he went along. He was struck by the fact that we never hear of elephantiasis attacking the arms, and thus he thought that gravitation had something to do with it.

Dr. Stirton confirmed what *Dr. Morton* had said about hæmorrhage, especially with reference to labial tumours. He had frequently removed such tumours of very large size, and never had any trouble with hæmorrhage.

Dr. Turner, in reply, said that he would have liked to have

entered upon the question of ætiology, but it would have taken too much time. The disease was almost universal in Samoa, and attacked Europeans and natives alike. He had had four attacks of it himself, one in the right leg, one in the right arm, and two in the left arm. It begins with rigor, fever, swelling of the lymphatics, and then swelling of the whole affected part. It attacked the mamma in women, and was often seen in the arms. He thought it was caused by malaria, and not by a blood worm, the *filaria sanguinis hominis*, as some held.

DR. J. LINDSAY STEVEN read, "ON THE PATHOLOGICAL ANATOMY OF TUBERCULOSIS OF THE FALLOPIAN TUBE," and showed a specimen of this disease. (See p. 411.)

Dr. Hugh Thomson said that he had once seen a case of this disease in a woman, whose other organs were healthy. She had been killed by falling from a window. At the *post-mortem* a rupture of the intestine was found, and also a caseous tumour in one of the Fallopian tubes. The other organs of the body were healthy.

Dr. Stirton wished to know whether the tubes were pervious throughout, whether the disease in the tubes was primary or secondary to the lesions elsewhere, and whether there was any clinical history of the affection.

Dr. Steven said that he had been unable to find any distinct canal, and that he could not say with certainty whether the affections were primary or secondary in the absence of any clear clinical history.

GLASGOW SOUTHERN MEDICAL SOCIETY.

SESSION 1881-82.

MEETING XIII.—27TH APRIL, 1882.

DR. N. CARMICHAEL, *President, in the Chair.*

DR. A. NAPIER read a paper on the USE OF CHRYSOPHANIC ACID INTERNALLY IN THE TREATMENT OF PSORIASIS, and showed a case. While admitting the value of chrysophanic acid applied externally in psoriasis, he pointed to the fact that this mode of using the drug has many disadvantages: it is an excessively dirty application, it is extremely irritating to the

skin, it stains everything with which it comes into contact, and it is costly. The internal use of the remedy, if it were found to influence psoriasis when given in this way, would obviate most of these drawbacks. Prof. Charteris' cases (*Lancet*, 23rd April, 1881) showed conclusively that the acid has a constitutional as well as a local action, even when applied only to the skin. Mr. Glaister's case (*Glasgow Medical Journal*, October, 1881), however, made it clear that a drug having such powerfully irritant properties, must be used with circumspection if administered internally. Nevertheless, if given cautiously, chrysophanic acid may be given internally, and with success, in the treatment of psoriasis.

The following case was then described and shown. D. A., aged 16, a strong, healthy looking lad, appeared at Anderson's College Dispensary, on 28th September, 1881, suffering from psoriasis of three months' standing. The eruption covered the whole of the body with the exception of the face, palms, and soles, the scalp being specially severely involved; most of the spots were about as large as a sixpenny piece, though very many measured at least two inches across. This patient was kept on arsenical treatment for more than a month, but this produced not the slightest improvement. On 2nd Nov. he was ordered powders, each of which contained $\frac{1}{8}$ grain of chrysophanic acid rubbed up with 3 grains of sugar of milk; one powder to be taken after each meal. A week later the patches were paler, less scaly, and less itchy; there was no sign of vomiting or gastro-intestinal irritation. On 23rd Nov. the dose of the acid was increased to $\frac{1}{4}$ grain, on 30th Nov. to $\frac{1}{2}$ grain, on 7th Dec. to $\frac{5}{12}$ grain. On 21st Dec. improvement was very marked; dose increased to $\frac{1}{2}$ grain. 28th Dec., dose increased to $\frac{3}{4}$ grain—still no sign of irritation. 4th Jan., 1882, patient nearly well, dose increased to 1 grain. 18th Jan., dose $1\frac{1}{2}$ grains; 25th Jan., dose 2 grains. 2nd Feb., patient is now well, there being no trace of eruption on body, limbs, or head; sites of eruption slightly paler than surrounding sound skin; patient states that improvement appeared earliest and was most evident on the scalp. Up to this point the patient had never vomited, or showed any sign of gastro-intestinal irritation. To prevent relapse 3-grain doses were now ordered. For about a week these powders were borne well, but at length they caused sickness and had to be stopped; $2\frac{1}{2}$ -grain doses then acted similarly, and so did pills containing 1 grain of the acid with 1 grain of extract of henbane; the dose had to be reduced to $\frac{1}{2}$ grain, with sugar of milk as before, and this the patient

took for about a month without inconvenience. No other treatment, external or internal, was adopted in this case. During the course of the treatment the patient had no conjunctivitis, and the colour of his hair was unaffected; the medicine very seldom caused pain in the stomach or bowels, and vomiting, when it eventually supervened, was easy and painless; there was no interference with appetite or digestion; occasionally the bowels were caused to act rather freely; there was no change in the urine.

Dr. Napier then referred to another case of PSORIASIS, in a brother of the foregoing patient, which had improved very considerably under the same treatment. The patient, a boy of 12, was taking $\frac{1}{2}$ grain of the acid three times a day.

Some other cases had been put on the same treatment, but, like too many dispensary patients, they had attended irregularly and were lost sight of, though several of them had already improved considerably.

Dr. Napier, while shrinking from dogmatising on the strength of such a slender experience, stated that he thought he had shown, for the first time, that in certain cases psoriasis may be cured by the use of chrysophanic acid internally; that the belief that the drug has a general as well as a local action is well founded; and that the acid is capable of being absorbed when taken internally, and of exercising a special influence on the skin after absorption. He was unable to say what the nature of that influence might be, but suggested that, like arsenic, chrysophanic acid may have some special selective influence on the epidermis.

There should be many cases in which the use of chrysophanic acid in this way should prove beneficial, as when the eruption is very extensive, when the skin is very delicate and irritable, and when expense is an obstacle to the use of the drug in any other way. The dose should at first be small; probably $\frac{1}{2}$ grain would be a good medium dose to start with in an adult. It should be gradually increased as the stomach will bear it. When intolerance is once established, small doses should again be resorted to. The acid seems to be best borne in powder, simply combined with sugar of milk, and taken after food.

Dr. Napier concluded by referring to the experiments of Dr. J. A. Thompson (*Brit. Med. Jour.*, 19th May, 1877), which seemed to show merely that the drug was "a valuable emetic purge;" to the notices of chrysophanic acid found in Wood's *Therapeutics*, 1881, p. 460, and in Phillips' *Materia Medica*, vol. i, 1874, p. 182, *et seq.*; and to some experiments performed

by Drs. Lewin and Rosenthal (See *Virchow's Archiv*, lxxxv, p. 118, and last volume of this *Journal*, p. 387), which showed that chrysarobin, applied externally, is absorbed by the skin, that it is partly converted into chrysophanic acid in the system, and that the part which is not so oxidised excites nephritis in being eliminated by the kidneys.

Mr. E. McMillan thought that Dr. Napier's case marked a distinct therapeutic gain. To get a proper constitutional influence of the drug it should be begun in very small doses; and he thought that when it was found that the stomach would not tolerate the acid it would be better to stop it entirely for a few days and then begin again.

Dr. D. N. Knox thought that, considering the fact that psoriasis is often a very chronic and intractable disease, the time taken in the treatment of this case (three months) was not unduly long.

Mr. Glaister, referring to his case quoted above, stated that his experience of the use of chrysophanic acid internally was wholly involuntary and accidental. He would have less fear in employing the remedy in future.

The President congratulated Dr. Napier on his results, and expressed his intention to give the mode of treatment described a trial when he had a suitable opportunity.

Dr. Napier thanked the members present for the reception accorded to his paper, and referred to a case at present in Prof. Charteris' wards in the Royal Infirmary, which was being treated by chrysophanic acid internally. The patient was a girl of 13, suffering from very extensive and well marked psoriasis of four months' standing affecting scalp, face, trunk, and limbs. The girl was already taking nine grains of the acid per day, in separate doses of one grain, in the form of pill with bread crumb, and already showed very striking improvement; though the medicine caused a little gastro-intestinal irritation at first, this had now entirely subsided. The spots on the body had now disappeared, those on the limbs were healing rapidly, especially in the centre. The nurse of the ward very feelingly said that this was a much easier and cleaner mode of using the acid than by rubbing, and that the patches on this girl looked like those on the other patients "on the leg that wasn't rubbed" (referring to Prof. Charteris' use of the remedy to one side of the body only).

M E D I C A L I T E M S .

UNDER THE DIRECTION OF
ALEX. NAPIER, M.D.

A Correction.—Dr. P. G. Unna, of Hamburg, writes to correct an error which crept into an "Item" which appears at p. 312 of this *Journal* (April, 1882). It is there stated that in the treatment of "ephelidæ" he applies, during the day, an ointment containing the subnitrate of bismuth; this should have read *oxychloride* of bismuth. Dr. Unna's principal object in publishing the article quoted was to recommend this "almost unknown but very useful preparation."

Iodoform as a Surgical Dressing.—Numerous articles on the use of iodoform in surgical hospital practice have appeared in the German medical journals since those noted at p. 67 of this journal. Of these articles the following is a pretty complete list:—*On the Use of Iodoform in Surgery.*—König, in *Centralbl. f. Chir.*, 1881, No. 48; Görges, *Ibid.*, 1882, No. 10; Mosetig-Moorhof, *Wien. Med. Wochenschr.*, 1881, No. 41, et sq.; Falkson, Hœftmann, *Berlin Klin. Wochenschr.*, Jahrg., xviii, No. 48; Güterbock, *Ibid.*, No. 39; Leisrink, *Ibid.*, No. 47; Mikulicz, *Wien. Med. Klinik.*, 1882, hft. 1; Delbastaille and Troisfontaines, in pamphlet, published at Liege. The iodoform treatment of tuberculous disease of bone, Gussenbauer, *Prager Med. Wochenschr.*, 1881, Nos. 33-35. Iodoform in ovariectomy, Leoschin, *Centralbl. f. Chir.*, 1882, No. 2. Report on cases (72) treated with iodoform in Thiersch's Clinique, Beger, *Deut. Zeitschr. f. Chir.*, 1881, bd. xvi, hft., 1 u. 2.

In these articles there is given at great length the results obtained by the use of the "new antiseptic," in what now amounts to a very large number of cases in the hospitals of Vienna, Prague, Göttingen, Kasan, Hamburg, Königsberg, Leipsic, Berlin, and Liege, and all the authors noted above do not hesitate to extol it in very high terms. The wide range of its usefulness is indicated by its successful use in all the major operations, including ovariectomy, amputation, excisions of joints, removal of the jaws, excision of the tongue, and all operations about the mouth and throat, and in tuberculous diseases of the latter, in operations about the vagina and rectum, in sequestrotomy, opening abscesses, empyema, in strumous diseases of glands, in ozæna, &c. Its use in obstetric practice has already been referred to at p. 399, and in the

Boston Med. and Surg. Journal for 9th Feb. last there is an abstract of a paper by Dr. E. Cutter, of New York, on its uses in various diseases of the womb, &c. Excisions of joints for strumous disease have given very good results under iodoform treatment (Gussenbauer). The limb is first made anæmic by Esmarch's bandage. After removal of the diseased bone and ligature of the vessels, the wound is filled with iodoform, sutures being generally dispensed with. "Lister's dressing" is then applied, as being the most absorbent and the least likely to require changing. Not till all this has been done is the tourniquet removed. The dressing never requires changing before the eighth day, and in many cases is not changed for some weeks, and at the end of this time the wound is found quite healed (by granulation). It is asserted that recurrence of disease is less likely when iodoform is used; Gussenbauer thinks this is due to specific constitutional action of the drug absorbed by the wound, while König denies such action, but attributes the favourable results merely to rapid healing. After operations about the mouth, the application of compresses of iodoform gauze favours rapid healing, thus probably averting to some degree the recurrence of malignant disease, and also, by abolishing secretion and smell, adds very much to the patient's comfort. Compresses made from pieces of gauze 15·20 cm. long, and of the width of three fingers, sprinkled with 50 gr. of iodoform, and folded in four, are pressed against the raw surface. They often do not require changing for from five to eight days, do not swell, and do not interfere with the patient swallowing liquids. It is in this same way also applied to wounds about the vagina and rectum, or on pledgets of absorbent cotton, and it is asserted that by the latter method the unpleasant odour of the drug is destroyed.

In ovariectomy (Leoschin) the iodoform was sprinkled all over the exposed peritoneum and the divided pedicle between the lips of the wound, and over the surface of the sutured external wound with absorbent dressings outside. In all the cases recovery was rapid, and quite without reaction. In one case especially, where a suppurating cyst was torn during the operation, and the contents escaped into the peritoneal cavity, the result was very satisfactory.

Görges has used it to prevent local complications in tracheotomy wounds in cases of diphtheria, painting the raw surface daily with a solution of iodoform in collodion. In 22 cases thus treated the disease did not once infect the wound.

Iodoform has also been used as a local application in diphtheria and in inflammatory, ulcerative, and tuberculous affections of the pharynx and larynx.

In most cases of ordinary wounds (operation or accidental) the iodoform is merely spread on the surface, and covered with dry lint or gauze, with some impervious material over that, and a firm bandage externally. Under various circumstances, however, special preparations are employed. The iodoform *compresses* have already been described. A better kind of gauze is said to be undressed gauze that has been steeped in a mixture of 1 pt. glycerine, 4 pts. colophonium, and 200 pts. spirit, sprinkled with iodoform when required for use. Soft bougies, pencils, or pessaries are made with iodoform and gelatine, and hard ones with cacao butter, or gum tragacanth. Instead of pessaries gelatine capsules are used in America, retained in position by absorbent cotton. Wet preparations for injection (into sinuses, orifices, or cavities) or ordinary dressings are the ethereal solution, or "emulsions" made with oil, glycerine, or mucilage. A very useful emulsion is composed of iodoform, distilled water, and glycerine, equal parts, with mucilage in sufficient quantity. To various passages and cavities iodoform in powder can be applied by insufflation.

Two kinds of iodoform are met with in commerce—one in small hard crystals, the other in the form of a fine powder. Most observers agree that the crystalline form is the better, as it is much more slowly absorbed, and thus is less apt to give rise to constitutional symptoms. Besides, the pulverised form is much less pure, and some have attributed the occasional severe constitutional effects to the impurities rather than the drug itself.

V. Mosetig-Moorhof formulates the following conclusions:—

1. Iodoform is a specific against local tuberculous processes. It acts powerfully, both locally and constitutionally.

2. It acts with more certainty if the fungous granulations are first scraped away. This is absolutely necessary in caries fungosa only.

3. From its remaining *in* the wound, iodoform is, for non-fungous wounds, the most reliable antiseptic.

4. Iodoform absorbed, and eliminated by the kidneys, is in moderate amount not injurious, but in many unhealthy systems beneficial.

5. It allays pain, promotes growth of granulations, and prevents septic processes in wounds.

6. The process of healing is almost afebrile. Sometimes

there is aseptic fever. The presence of the powder between the lips of a wound does not prevent primary union.

7. Drainage is necessary. Dressings only require changing when there is feverishness, for staining or saturation of the bandages does not destroy the antiseptic properties of the dressings.

8. Inflammation of the wound is rare ; if present, it is due to imprisoned secretion.

9. By the use of iodoform disinfecting fluids are rendered unnecessary ; general cleanliness and washing with clean water being alone required.

10. Iodoform dressing is the cheapest, most reliable, and universally applicable dressing. The preparations will keep for years.

11. Iodoform is *the* antiseptic for operations about the natural cavities (mouth, rectum, bladder).

12. For sensitive persons it can be deodorised by tonquin bean without detriment to its properties.

The value of iodoform in military surgery during a campaign scarcely requires testing to be apparent.

Regarding the constitutional effects of iodoform applied to wounds much is being written. The discussion of this point will afford material for a future "Item."—D. M'P.

Solvents of Iodoform.—The most agreeable form for the external use of iodoform is its solution in collodion. A 10 per cent solution is easily obtained by simply shaking the iodoform suspended in a little ether with the corresponding quantity of collodion. When required, even a 15 per cent solution could be prepared. Absolute alcohol dissolves 4 per cent, and therefore gives a solution sufficiently strong for many purposes. In some cases the use of irritating solvents, like alcohol and ether, is excluded, a milder solvent, such as glycerine or oil, being desirable ; but even anhydrous glycerine, at a temperature of 100° C., can only take up about 1 per cent, and more than one-half of this separates in cooling. More favourable results are obtained when oil is used, as it takes up about 20 per cent of iodoform at the temperature of the water bath, and retains 2 per cent in solution when cooled. A 2 per cent solution of iodoform in olive oil, prepared with heat, is only slightly opalescent upon cooling, and in many cases such a solution would be sufficiently strong. Suppositories of iodoform are sometimes ordered, and may be prepared by gently heating cacao butter with the above mentioned quantity of iodoform in a

closed vessel to prevent volatilisation and pouring into a mould at as low a temperature as possible.

Iodoform is also soluble in essential oils, and some other hydrocarbons. The following represents the solubilities at the ordinary temperatures:—

Light Petroleum Spirit,	. . .	1 per cent.
Benzine,	. . .	1.5 "
Oleum Terebinthinæ,	. . .	4 "
„ Lavandulæ,	. . .	7 "
„ Caryophyllorum,	. . .	8 "
„ Fœniculi,	. . .	9 "
„ Citri,	. . .	9 "
„ Rosmarini,	. . .	9 "
„ Cassiæ Cinnam.,	. . .	14 "
„ Carui,	. . .	16 "

Solution of iodoform in benzine and petroleum spirit quickly becomes rose coloured. A 5 per cent solution of iodoform in chloroform rapidly assumes a dark red colour, due apparently to chemical reaction.

Elastic cylinders, consisting of a mechanical mixture of 50 per cent of finely divided iodoform, with gelatine and glycerine, may be prepared by dissolving, with the aid of a water bath, 15 parts of the finest gelatine in 50 parts by weight of water, and 7.5 parts of glycerine, evaporating the solution to 54 parts, then stirring in thoroughly 27 parts of iodoform in alcohol, and pouring the paste into a warmed mould. The mould is at once placed in iced water, so as to produce rapid solidification, and prevent the settling of the heavy iodoform powder, and the solidified cylinder is finally reduced in a drying chamber to two-thirds of its original weight.—Dr. Vulpius, in *Pharm. Journal*. 8th April, 1882.

Pilocarpine in Pleurisy.—M. Coriveaud and M. Farge have published some observations favourable to the employment of pilocarpine in the treatment of pleurisy. Their remarks, which appear in the *Revue Scientifique*, 25th March, 1882, are to the effect that the cure took in general eight, ten, or twelve days, and it was necessary to employ six to ten subcutaneous injections. The nitrate of pilocarpine was injected in doses of from twenty-five milligrammes to one centigramme. M. Coriveaud has been struck by the sialagogue effects, while M. Farge attributes the cure in his cases entirely to the diaphoretic action.—*Lyon Médical*. April 1882.—J. A. A.

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